BUTANE-PROPANE News

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THE ROAD TO SAFETYVILLE (Page 13)
DON'T LET YOUR B. T. U.'s GET AWAY (Page 64)

Absolute dependability and satisfactory performance are behind the industry's preference for Hackney cylinders. Maximum strength has been combined with minimum weight. The two seamless shells are butt-welded by the Hackney process. X-ray control of this SINGLE circumferential weld and heat treatment of the cylinder after complete fabrication assures continuous trouble-free service. Hackney containers are available in many types and sizes for the storage and shipment of Propane and Butane.

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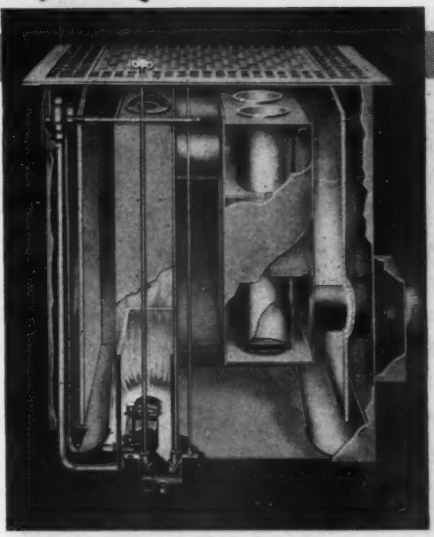

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Volume 2
No. 3

BUTANE-PROPANE News

MARCH
1940

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2 IMPORTANT ANNOUNCEMENTS CONCERNING L★P★G

1 • *Now,* through the formation of a *new* Customer-Counsel and Sales Department, this Organization—recognized as one of America's foremost L. P. G. engineering concerns—stands more ready than ever before to serve *every* branch of the L. P. G. industry! Our objective in creating this new department is to co-relate the vast fund of L. P. G. knowledge and experience we have gained so that it may be more fully and completely placed at *your* disposal as a means of soundly solving *your* L. P. G. problem. This new department will have full charge of sales of the most advanced, approved L. P. G. equipment and supplies; equipment for residential use; installation of bulk storage and dispensing equipment; and conversion of Trucks, Buses, Power Units and Tractors for L. P. G. as power fuel. We cordially invite *you* to make full use of the services offered by this new department and correspondence concerning your problem will be welcomed.

★

2 • To care adequately for the expanded personnel and service facilities required, Parkhill-Wade has moved to *new and larger* quarters at 1625 South Alameda Street, Los Angeles, California.

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LETTERS

● **BUTANE-PROPANE *News* welcomes communications from those identified with the liquefied petroleum gas industry, but readers will understand that this magazine does not necessarily concur in the personal opinions so expressed.—Editor.**

Gentlemen:

We note in a recent issue of BUTANE-PROPANE *News* Mr. Fannin's query regarding butane supply points for trucking. We take pleasure in announcing that this company is now operating a temporary skid tank at the Trail 30 Garage, Rawlins, Wyo., and has a full metering installation at Dallason's Service Station, Casper, Wyo.

As a newcomer to the L. P. G. field, we would like to add our two-bit's worth to the industry's name squabble. What's the matter with plain "liquid gas"? The "liquid air" industry seems to have struggled along pretty well for a number of years without such elaboration as "liquefied atmospheric air" or the like. Incidentally, have you noticed how smoothly the term "liquid gas" is used in the HANDBOOK OF BUTANE-PROPANE GASES? I quote from Page 249, second edition: "Poland is the only European country producing liquid gas from natural gas."

M. J. ROSENTHAL

Chief Engineer
Liquid Gas, Inc.
Casper, Wyoming

●

Gentlemen:

In regard to all this controversy over a name for our industry.

It appears to me that the whole trouble lies in the failure to adopt a simple designation that can be written and spoken easily and quickly, that will be "catchy" and arouse the interest of the uninitiated the very while it is self-explanatory to those on the inside.

The current Democratic administration has popularized, or at least publicized, the combination of letters standing for long phrases, such as WPA, TVA, FHA, etc., etc. Long before the Roosevelt regime, National advertising and common usage featured BVD, BO, MIK, and many others, to say nothing of the old USA.

Well, our industry has its own, well established, widely known term already coined for it and in general use. It is LPG!

Why not continue to use it?—without periods, and all "caps."

If some new users, or prospective consumers, are at first mystified, the explanation will be satisfying and enlightening, and may give the salesman an opportunity to display his knowledge.

It is a term that quite likely will catch the popular favor, as many such do, and will forever accurately describe the product, admittedly one hard to designate briefly.

I say, let's adopt "LPG" and close the contest.

Very truly yours,
W. W. CHASE

Manhattan Beach, California

"LPG" is a good editorial form, at least. We plan to make use of it. Is it suitable for wider adoption?—ED.

●

Gentlemen:

Your splendid little magazine has commenced to arrive here, and I am sure that it is going to be of greatest value to us as distributors of LPG. I am sorry that issues previous to November, 1939, are out of print, and I hope that if you are able to lay your hands on any of them you will not overlook us; we are still anxious to complete our file.

H. M. CLARKE

Western Canada Blue-Gas
Vancouver, British Columbia

●

Gentlemen:

I think BUTANE-PROPANE *News* the greatest source of help there is to be found for information and sales helps. Continue the good work.

I. S. MULLINS

Household Appliance & Supply Company
Canyon, Texas

●

Gentlemen:

I consider your publication the most enlightening of its kind and it has been a great help and sales clincher in my territory, where butane is a new product.

R. E. STUCKER

Carolina Butane Gas Co., Inc.
Charleston, South Carolina

●

Gentlemen:

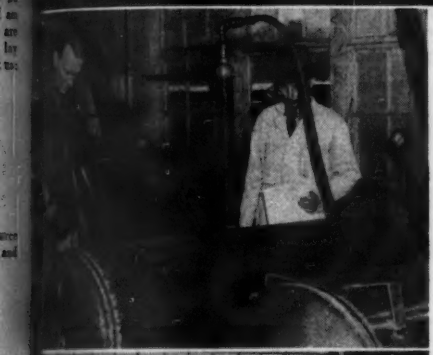
Some time ago I noticed that you had put out a binder for BUTANE-PROPANE *News*. We feel that these magazines have a wealth of information in them and as we refer to them from time to time we would like to get a binder for the greater convenience it affords. We would appreciate it very much if you would put one in the mail for us right away.

W. W. ROBINSON, JR.

Adams & Robinson
Corinth, Mississippi

Of course, the binder has been mailed. The suggestion in the letter is timely to all who wish to retain a permanent file of BUTANE-PROPANE *News. And apparently, nearly everyone does.*—ED.

Sound Construction



plus the exclusive Vaporizer and Revaporizer are features that have made

HYDRO-GAS

the most dependable underground liquefied petroleum gas system available today. The product of a manufacturer with nearly a half-century experience in the fabrication of steel products, the parts and materials that go into every system are the very best, and meet the rigid specifications of the American Society of Mechanical Engineers. All Hydro-Gas Systems are designed to conform with the regulations of the National Board of Fire Underwriters and are built in accordance with and under the re-examination procedure of the Underwriters' Laboratories. Each system further meets, during manufacture, the rigid inspection standards of the Hartford Steam Boiler Inspection and Insurance Company. Dealers and users alike, everywhere, recognize HYDRO-GAS SYSTEMS as the leader in the field. Correspondence is welcomed from responsible prospective distributors and dealers in territories not now under franchise.

SOUTHERN STEEL COMPANY

SAN ANTONIO, TEXAS

HYDRO GAS SYSTEMS

EXPERIENCED
• When "bottled" gases were in their infancy "American" research already was focused upon developing special meters and instruments for handling them. Behind the complete "American" line is a century's pioneering of every genuine advance in gas measurement.
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AMERICAN
METER COMPANY
(ESTABLISHED 1836)

MAINLY BEYOND THE MAINS

COMPETITION IS AROUSED

On the outside looking in, *Electrical Merchandising* in its issue for January, 1940, has this to say about the liquefied petroleum gas industry: "Ranges: A growing competitive factor is that of tank gas. From many parts of the country come reports that this tank gas competition is taking a lot of business, not only in rural territories, but in suburban and even city territories. Estimates of the total number of installations of tank gas for range and water heater service add up to extravagant levels. But the conservative estimate is that there were approximately as many tank gas range installations in the country in 1939 as there were electric range installations.

"There are contributing factors to this situation such as the attractive proposition made to dealers for servicing these installations. But the rapid progress of tank gas may be laid fundamentally to the conflict between gas and electric companies and the policies of combination companies that hold back the promotion of electric ranges to a point where users in their territories have little or no knowledge of what the electric range has to offer."

That's a straw in the wind we can well afford to watch until it lights. For the record of the electrical industry is that when competition shows its head it goes after it with brickbat and bludgeon. If the "tank gas competition is taking a lot of business" the electrical competition is certain to challenge the right to any part of it where electricity is available.

The problem concerns the old and established public utilities as well as it does the new liquefied gas industry. For all practical purposes gas is gas, in the minds of the consumers as well as in the opinion of the electrical industry. And the whole power industry is too potent a factor to be met and fought with divided forces.

The public utilities serving manufactured or natural gas from city mains need the assistance that tank gas can offer them. They need it for extension of gas service into localities too sparsely populated to justify the building of mains. They need it for auxiliary supply or enrichment where peak loads are taxing existing plant capacities.

The liquefied petroleum gas industry is equally in need of the

cooperation of the gas industry as a whole. On the premise, which we repeat, that tank gas supplies a public utility service whether its purveyors call it that or not, it is going to meet with all of the problems of legislation, regulations, restrictions, taxation, service and public relations that city gas companies have met and solved over the years.

The electrical competition draws no fine distinction between two kinds of gas. There are two kinds of electricity too; but we have yet to hear of a jurisdictional row breaking out between companies selling A. C. and companies selling D. C.

The electrical industry presents a united front, of utilities, appliances, manufacturers, and dealers combined for the common good of all. They have just one goal—the more universal use of electricity for every purpose to which it is even remotely adapted.

Nothing less than a completely united gas industry can ever hope to meet the challenge of such competition.

(EDITOR'S NOTE: In the interests of promoting more active cooperation between all factors in the gas industry, manufactured, natural and liquefied, this editorial appears also in the March issue of *GAS* Magazine.)

A RICH FIELD TO HARVEST

A recent survey of real estate brokers specializing in farm property indicates that 76 per cent of the inquiries to buy farms were not from practical farmers, but from city people interested in buying country property. And these farm-minded city folks bought 61 per cent of the total number of farms sold in 1939.

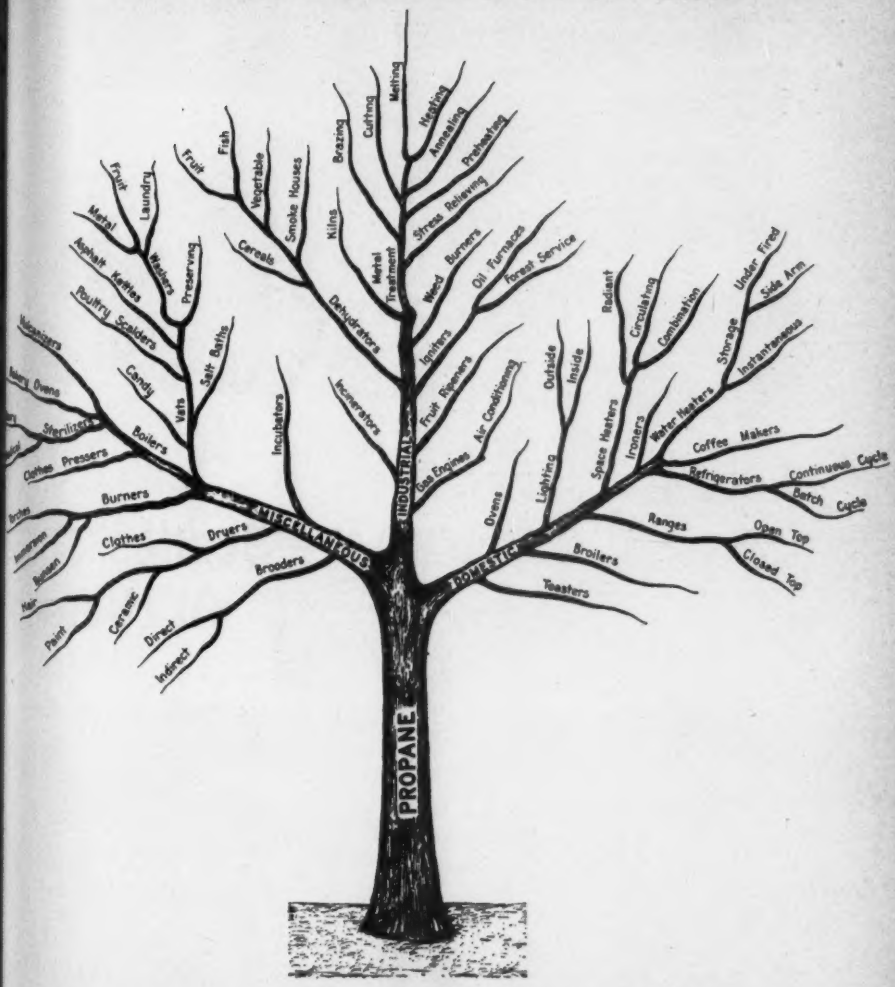
The farm wife who has lived in the country all her life may be pretty well adapted to the use of solid fuel for cooking and water heating. But the city family moving into the country is not conditioned to consider primitive in kitchen or bath.

Such newcomers beyond the reaches of the city mains represent ideal prospects for LPG service. Almost invariably they arrive on the land with some backlog of cash that they plan to use for improving their new property. And because they are city-inhibited, the first improvements are generally made in the house.

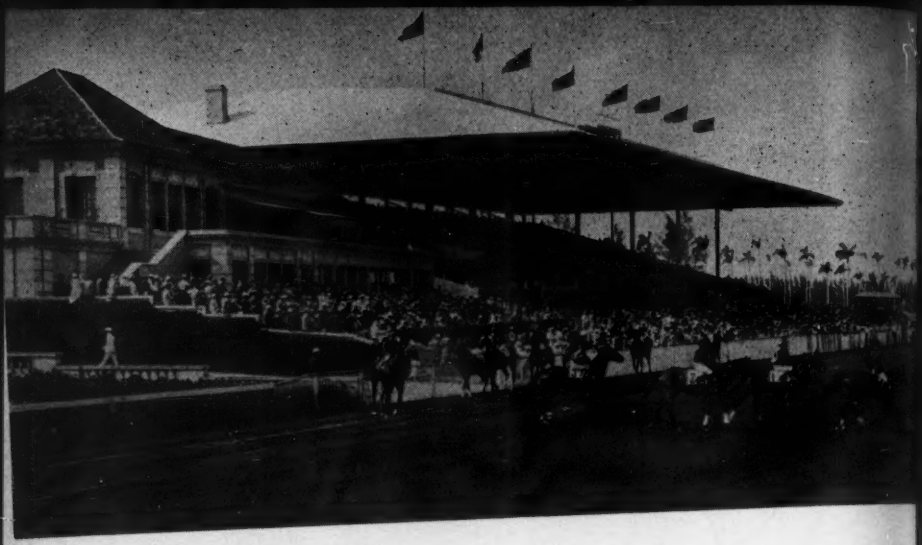
Nothing will better repay the rural dealer than to keep a weather eye open for property transfers over his territory, and get on the job with his story before the home electric boys close a deal. A little realistic cooperation between real estate broker and LPG dealer will often provide exclusive source of good names for the dealer to follow up. Often the broker knows just when a family is scheduled to arrive, and is on hand to greet them.

If the trailer-demonstrator salesman of gas and appliances is looking for a natural, there he has one.

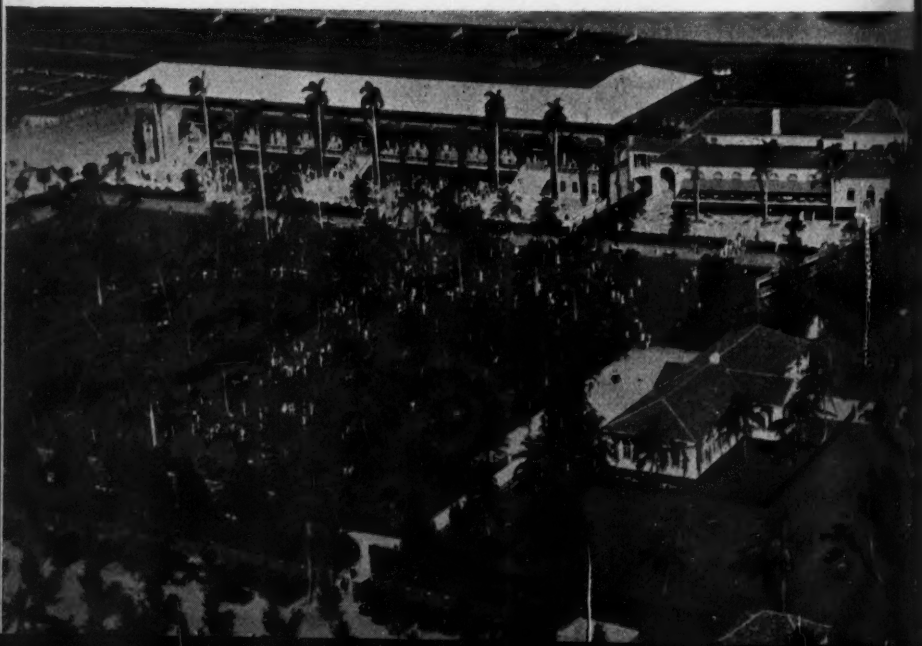
THE FAST-GROWING PROPANE TREE



This "propane tree" was prepared to show the multitude of uses to which propane may be applied in the domestic, industrial, commercial and agricultural fields. It offers many helpful sales suggestions. There will scarcely be a need that your prospect has which cannot be satisfied with this multi-purpose fuel. The propane tree is growing rapidly year by year, and the industry challenges anyone to heat anything with coal, wood, oil, electricity or other fuel, that cannot be heated equally as well, or even better, with LPG. (This drawing was reproduced from "Flamo Sales Flashes," issued by the Standard Oil Co. of California.)



There is Propane Behind the Scenes At Hialeah



Every Day's Best Bet at Hialeah

By J. N. DAWSON*

HIALEAH is the Florida Mecca for winter race fans. It is considered as one of the most beautiful racing plants in the world, with wide spacious lawns, luxuriant shrubbery, stately royal palms and tropical plants in full bloom, making it a veritable paradise. The clubhouse and grandstands are ample for the many thousands that gather to see the races and from either may be seen the pink flamingoes and regal swans that decorate the lagoon in the center of the track. During the racing season, which lasts six weeks, usually starting about the middle of January, Hialeah is at its best and a visit to this tropical wonderland with its colorful crowd and thoroughbred racing is one long to be remembered.

But Hialeah also has its practical side and this is the one our article is to deal with, for to take care of the many thousands that gather for the races and to cater to their wants requires careful planning and a tremendous amount of work. One of the organizations that helps make Hialeah Park run smoothly during the racing season is The Harry M. Stevens Co., caterers who handle the eating concessions in the clubhouse and grandstands. This organization has for many years handled similar concessions, among which are the Polo Grounds and Yankee Stadium, New York; Bowie race track, Maryland; Coliseum, Chicago; Juarez Jockey Club, Juarez, Mexico; and Oriental Park, Havana, Cuba.

Several years ago this company decided to replace the gas then used with bottled gas. The first appliances installed were heavy duty restaurant cookers and coffee urn burners for the hot dog stands. These proved so satisfactory that additional equipment has been added each year until the present appliances in use are: eight heavy duty two-burner restaurant cookers; six heavy duty three-burner restaurant cookers; a No. 200 Ruud multi-coil automatic storage water heater; 20 burners for steam tables, dish warming cabinets, and coffee urns; Vulcan ceramic broiler; burner under dish washer, and a toaster.

These appliances have a rated consumption of approximately 60 pounds of propane gas per hour and the amount of piping necessary to connect them to their various locations throughout the clubhouse and grandstands is 1500 ft. There are three main supply lines, two running from the cylinder location at the South end of the clubhouse and the third

*Sales Manager, Southeastern Natural Gas Corp., Miami, Florida.

running from the cylinder location at the North end of the grandstands.

One of the main lines serves all of the appliances located in the clubhouse kitchen and the second runs to the South end of the grandstands, serving all of the appliances in the grandstand kitchen. The third main line from the North end supplies several hot dog and coffee stands located throughout the grandstands. During the racing season the consumption of these appliances averages approximately 1400 lbs. of gas per week.

To adequately handle this load there is a series of four cylinders, each having a capacity of 420 lbs. of propane gas, located at the clubhouse end. These are manifolded together and the gas is reduced to five pounds pressure by the first stage of regulation. It is then metered through a number 5B Ironcase American high pressure meter, then through two secondary regulators, one for each main line, where the pressure is further reduced to the proper amount for burning in the appliances.

To serve the North part of the grandstands another 420-lb. capacity cylinder is used which is connected to the main line through one stage of regulation and one number 5B American Ironcase meter. The five cylinders have a total capacity of 2100 lbs. and are filled each week by a regular delivery truck driver.

These four cylinders, each with a capacity of 420 lbs., and manifolded together, supply gas to the several lines running to grandstand and clubhouse appliances at Hialeah.

The Road to Safetyville

By LEONARD F. MAAR

Safety Research Institute, New York City

THE liquefied petroleum gas industry has demonstrated that butane-propane products, like any other flammable material having an inherent fire and explosion hazard may be handled and used with safety if reasonable precautions are observed.

The limits of these precautions have been defined carefully by the industry itself, the National Fire Protection Association, and the insurance underwriters. These precautions, or safe practice requirements, have been discussed often, competently, and at length by many authorities. In fact, they have become such an integral part of the business that plant operators observing them have less to fear from the character of the products than they do from their exposure problems. For them it may be said that the fire and explosion safety of butane-propane plants is in direct ratio to their vulnerability to ignition from extraneous sources.

However, considerably less has been said in the industry about the actual equipment needed to protect plants from fire.

According to safe practice standards, plants invariably are located well away from inhabited areas or outside corporate limits, remote from fire stations. This places on the operator the burden of providing the means to fight fire as soon as it is discovered. A small fire may be effectively stopped if it is attacked promptly and efficiently. The interval of delay while waiting for the firemen to arrive may mean the difference between being in or out of business. The fire department should be called in every case, but not at the expense of precious moments that might be used to put out the threatening blaze.

Consider the sources from which fire may be brought into almost any plant. A brush or grass fire may be swept down upon it by the wind. Firebrands and sparks may be carried through the air. An accidental spill of gasoline or liquefied gas may be ignited by static sparks. Spontaneous ignition may occur in oil-soaked clothing inadvertently left on the premises. Defective or damaged electrical wiring and equipment may burn. In short, the plant operator must be prepared to protect his investment against all types of fire.

Fire protection authorities recognize three types of classifications of fire. No one type of fire extinguisher is recommended for all of them. The following table lists the classifications of fire and the types of extinguishers approved for use on these fires by fire insurance underwriters and laboratories:

CLASS A—Fires in free-burning materials such as wood, paper, or grass and brush fires. For extinguishment they re-

quire the quenching and cooling effect of water. Recommended are the soda-acid, anti-freeze solution, foam, loaded stream, and water type extinguishers. The vaporizing liquid type also may be used on small *Class A* fires where there are no strong currents of air to dispel the extinguishing vapors.

CLASS B—Fires in flammable liquids such as gasoline, oils, greases, etc. They require a blanketing and smothering effect that will exclude oxygen from the flames. Recommended are the vaporizing liquid, foam, loaded stream, and carbon dioxide extinguishers.

CLASS C—Fires in live electrical equipment requiring extinguishing agents that are non-conductors of electricity. Recommended are the vaporizing liquid, and carbon dioxide extinguishers.

Since practically all types of extinguishers may be used in butane-propane plants, it is up to the operator or the person directly in charge of fire protection, to select types that will exactly meet existing conditions.

Temperatures Have Influence

Consideration should be given the temperatures to which extinguishers will be exposed. The soda-acid and foam types should not be exposed to temperatures lower than 40° F. The anti-freeze solution and loaded stream types have a freezing point of 40° below zero F. The vaporizing liquid extinguisher may be exposed to temperatures as low as 50° below zero F. The carbon dioxide extinguisher does not have to be protected against freezing and its operation is not affected appreciably by the lowest climatic temperatures.

Unpredictable accidents can occur in butane-propane plants. Some months ago in Stanhope, N. J., a pump over a 12,000 gal. tank of liquefied natural gas, blew a gasket. The resulting pool of liquid was ignited, probably by a static spark. Employees at once went into action. Using vaporizing liquid extinguishers, they checked the gas fire. Soda-acid streams were directed at pipe lines and tank to cool them and hold down vaporization. When the local fire company arrived, they found the spread of the fire had been checked and they finished up the job with foam for the burning liquefied gas, and water from their booster line to cool off the steel work and the balance of the fire.

Four Extinguishing Agents Used

In this instance, four different extinguishing agents were called into play. They were all needed.

It is an easy matter to keep fire extinguishers properly maintained. The directions of the manufacturer, appearing on each unit should be followed to the letter. Only materials and replacement parts furnished by the manufacturer should be used. A record should be kept of the dates of inspection and the identity of the person making the inspection or recharging each unit. This is usually done on tags attached to each extinguisher.

All employes should be trained to handle the equipment and become familiar with their operation. When extinguishers are recharged it is a good plan to arrange a drill at which each employe will be given an opportunity to use them on practice fires, but make certain these fires are well outside the danger zone and it would be wise to have a professional fireman supervise the drill.

Branch Testing "Lab" Dedicated

THE dedication of the Pacific Coast Branch of the American Gas Association Testing Laboratories in Los Angeles, held Feb. 12-15, emphasizes the latest constructive efforts made on behalf of gas consumers to provide increased regional facilities for testing gas burning appliances, including those adapted for use with liquefied petroleum gases, in accordance with carefully prepared national standards.

It has been the magnitude and rapid growth of gas appliance manufacturing on the Pacific Coast, in addition to incident delays and expense of shipping to the main laboratories in Cleveland, that indicated the desirability of a Western branch, as was stated in the key speech at the dedication ceremonies by Alexander Forward, managing director of the American Gas Association. Mr. Forward credited A. F. Bridge, vice president and general manager, Southern Counties Gas Co., Los Angeles, with having done more than anyone else to bring this Branch into existence.

Appliance testing was originally established in Los Angeles in 1931, but inadequate quarters gradually culminated in plans for the new, specially designed laboratories that have now housed all testing equipment and offices since last November.

In addition to four days devoted to dedication ceremonies and open house for manufacturers, dealers and gas utility representatives attending the Spring Sales Conference of the Pacific Coast Gas Association, a preliminary inspection was arranged for the press on Feb. 9.

Laboratory specifications have now been extended to include domestic gas ranges, space heaters, water heaters and central heating plants, including boilers and warm air furnaces. All operations of the Pacific Coast Branch and the main laboratories in Cleveland are directed by R. M. Conner, who has served in such capacity since 1925. W. H. Vogan is supervisor of the Los Angeles Branch and F. A. Allen is assistant.

R. M. Conner, director of A.G.A. Testing Laboratories, and Test Engineer Howard Hill examining oven heat distribution test on gas range at the Pacific Coast Branch Laboratories.

This photograph was taken at the luncheon of the Eastern Section of the Liquefied Petroleum Gas Association, Inc., during its winter meeting which was held in New York City, Jan. 24-25. Papers were read on subjects of interest to

Eastern Meeting Highlights

By ELLIOTT TAYLOR

New officers who will direct the Eastern Section of the Liquefied Petroleum Gas Association in 1940, and who were elected at the New York City meeting Jan. 24-25, are W. L. Hauck, Wm. B. Scaife & Sons Co., New York, chairman; F. W. Frost, Pyrofax Division, Carbide and Carbon Chemicals Corp., New York, vice chairman; and W. A. Seigfried, Kerotest Manufacturing Co., Pittsburgh, secretary. H. W. Richdale, Vapyre Corp., Brewster, N. Y., was the retiring chairman.

ONE hundred and sixty-five members and guests of the Eastern Section of the Liquefied Petroleum Gas Association registered at headquarters at the Park Central hotel in New York City, and attended the meetings, formal and informal, in assembly hall and in hotel rooms, that constituted the two-day program of the annual meeting of the section, January 24-25, 1940.

•

Twenty-two manufacturers signed up for all of the exhibit space available, and their combined showings of ranges, water heaters, gas-fired refrigerators, meters, regulators, gages and other equipment and appliances held the center of attention when meetings were not in progress.

•

In the first session on the program R. E. Cecil, of Wm. B. Scaife and Sons Co., asked the question, "Do You Know Who Runs Your Business?" Without waiting for any reply to this academic inquiry, he proceeded to tell the industry *who would be running it* if the members didn't look sharp to running it themselves. The legislators, the tax gatherers, the safety councils and the sheriff are all possible candidates. As the industry grows it will be faced with additional regulations, taxes and other obligations. These cannot be avoided, but they can be kept within reason if the industry itself is conducted in a manner to make hampering legislation unnecessary. Education of its members, concerted action through Association membership, and a close scrutiny of any affecting laws before they are passed, all will help.

•

Kate Smith of Atlantic States Gas Company extolled the "Value of Home Service Work," with practical tips from her background of experience in that field. The first aim of Home Service is better public relations, then more sales and better appliances in use. Since most LPG users buying equipment are using gas of any kind for the first time, Home Service in this field is doubly important. Women who have been cooking with solid fuel welcome any kind of guidance and instruction in the use

This photograph was taken at the luncheon of the Eastern Section of the Liquefied Petroleum Gas Association, Inc. during the winter meeting which was held in New York City, Jan. 24-25. Papers were read on subjects of interest to

of their new appliances. In addition to home service, women's clubs, schools, radio, and employe classes all offer avenues of activity for Home Service. (An abstract of this paper will be found on page 25.)

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"Experiences With Various Container Finishes" has convinced H. K. Strickler of The Protane Corp. that dip galvanizing with zinc is the answer to the problem of external surface corrosion. Since his company has 125,000 galvanized tanks in use, on which he estimates they have saved $275,000 in finishes since 1926, his opinion carried weight with the audience. There is no interior deterioration of LPG cylinders; the outside presents the only problem. Paint looks fine at first, but its poor resistance to abrasion calls for a new job every two to two and one-half years. Metal spraying is unsatisfactory because of the weak bond strength of the coating. Summed up the advantages of zinc galvanizing are: resistance to corrosion; resistance to abrasion; safety in handling, since zinc does not spark if struck; no hidden corrosion since the pickling necessary to zinc galvanizing removes all surface scale and foreign matter; and finally a saving in maintenance cost. The disadvantages are that zinc dulls rapidly in appearance, and that present equipment does not permit dip galvanizing of cylinders of over 125-gal. capacity.

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L. R. Cartier of C & R Engineering Co., was moved up from his Thursday spot on the program and spoke Wednesday afternoon on "Equipment, Procedure and Cost of Five Year Cylinder Test." Cylinder testing is required by law under I.C.C. rules, but doing the job is a nuisance and an expense and the common practice is to try to forget about it until 4.9 of the five years have elapsed. The I. C. C. with the Compressed Gas Manufacturers Association's cooperation has worked out rules and regulations that must be followed in making these tests. The equipment required may cost anywhere from $400 to $800 per plant, and with it one man can test about 25 cylinders in an eight-hour day. Makeshift provisions for handling cylinders during testing are often used but they are poor economy since they cut down the daily output of the man making the tests. Centrally located testing equipment, with good drainage and water supply, and an electric or air hoist to raise and lower cylinders are all essential to an efficient testing layout.

•

Cutting metal with propane and oxygen torches offers the best potential market for the industrial use of propane, in the opinion of Adam Johnstone of The Bastian-Blessing Co., who read a paper and conducted a lively discussion on "Liquefied Petroleum Gas as a Fuel for Metal Industries and Allied Uses." Propane has the edge over acetylene in most cutting operations because it is cheaper to use, requires less oxygen, produces less slag adhesion, makes a squarer cut and a smaller curf. Acetylene is faster, however, and has the advantage that every torch operator

is familiar with its burning characteristics, while many of them are not yet educated in the use of propane. Small shops that keep only one cylinder of preheating gas on hand may prefer acetylene, as it is adaptable to both cutting and welding operations, while propane cannot be used so satisfactorily in welding.

Having a superior product and selling it into a market educated to the use of acetylene are two different things, however. In an open discussion from the floor Sam Kapneck and Louis Seley discussed the practical selling angles of propane for cutting. The latter cautioned the "little man" to be wary.

•

"Experiences in The Replacement Range Business" have convinced W. S. Falk, of the Phillips Petroleum Co., that liquefied gas dealers are in competition with electricity and not with each other. His paper read on Thursday elaborated on this conviction. Obsolete ranges and gas fired equipment attract electric competition out looking for replacement prospects. The public can be educated to the idea that a gas range good for a decade can still become outmoded, just as an automobile can. Service men are good lead-getters—if they are given an incentive to be observing and to make accurate reports on the state of affairs in their customer's kitchens. A special replacement campaign can be made a paying activity if it is properly planned and executed. High and medium priced merchandise should be featured—it's always easy to drop down a notch—a trade-in allowance should be advertised, and a financing plan to permit time payments should be arranged in advance.

•

"Insurance Problems" are becoming an increasing matter of concern to dealers and distributors of propane and butane, and these problems were high spotted by Clarence E. Cooper of Clarence E. Cooper & Co.

•

As an Old Timer, Peter A. Anderson, of Utilities Distributors, Inc., spoke on some "Tricks of the Trade." The latest Anderson trick is a correspondence course for his dealers which is complete in every detail including textbooks, examination papers, a professor to correct the papers and a certificate of completion to those who successfully pass the tests. It is up to the distributor to educate the dealers he is supplying, and Utilities Distributors undertook the job first in the form of service schools, supplemented by domestic, commercial and service manuals. But attending school costs time and money, and the correspondence course was selected as a desirable substitute. The course offered runs one lesson a week for 34 weeks. It is not confined to members of the U. D. I dealers' circle, but as a contribution to the industry Mr. Anderson offered it at cost to those present.

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Frank Featherston, Secretary of the L.P.G.A. wound up the open meetings with a brief account of "What the Association is Doing." Membership has increased from 100 member companies to 150 the past year.

Cylinder Charging

By FRANK HUGHES
Butane Sales Co., Inc., Montgomery, Alabama

A New Method Which Offers Small Distributor Flexibility, Low First Cost, Inexpensive Operation and Speed

WHEN the Butane Sales Co., Inc., was organized two years ago, it was the intention of the management to serve the territory around Montgomery, Ala., with underground tank installations. It soon became apparent, however, that the majority of suburban domestic installations could be better served as bottle gas customers. This was particularly true in the subdivisions to which the natural gas company serving the city of Montgomery contemplated extension of its mains.

One of our early problems was the development of a system for rapid and inexpensive cylinder charging. A method of filling propane cylinders is illustrated in the accompanying sketch (Fig. 1) and is operated in the following manner:

After cylinders are attached to the flexible connections and with all four valves, Nos. 1, 2, 3 and 4 closed, individual valves to each cylinder are opened. Liquid valves 1 and 2 are opened, allowing liquid to run into cylinders until pressure in storage and cylinders is equal. Then valves 1 and 2 are closed and valves 3 and 4 are opened, allowing the high pressure vapor from the cylinders to drain into the underground tank, thus lowering the pressure in cylinders. Valves 3 and 4 are closed as soon as pressure has equalized and valves 1 and 2 are opened, allowing liquid to again run into the cylinders. This operation must be repeated three or four times before cylinders are full.

The compressor must be large enough to keep the pressure in the underground tank down to about 20 to 30 lbs. or lower. It is recommended that the compressor be left running during the filling operation. The safety relief valve on the underground tank should be set at 75 lbs. A small twin cylinder refrigerator compressor will be large enough for about 20 cylinders. The one we have in use was bought second-hand about two years ago for $10. It is still giving satisfactory service.

Our underground tank has a capacity of 300 gals. and it is partly filled with regular butane. Any other size pressure vessel suitable for butane may be used but better results are obtained if the installation is underground. Our propane bulk storage is a standard equipped 15,000 gal. capacity, 200 lb. working pressure tank, mounted on reinforced concrete at railroad spur about 50 ft. from cylinder loading shed.

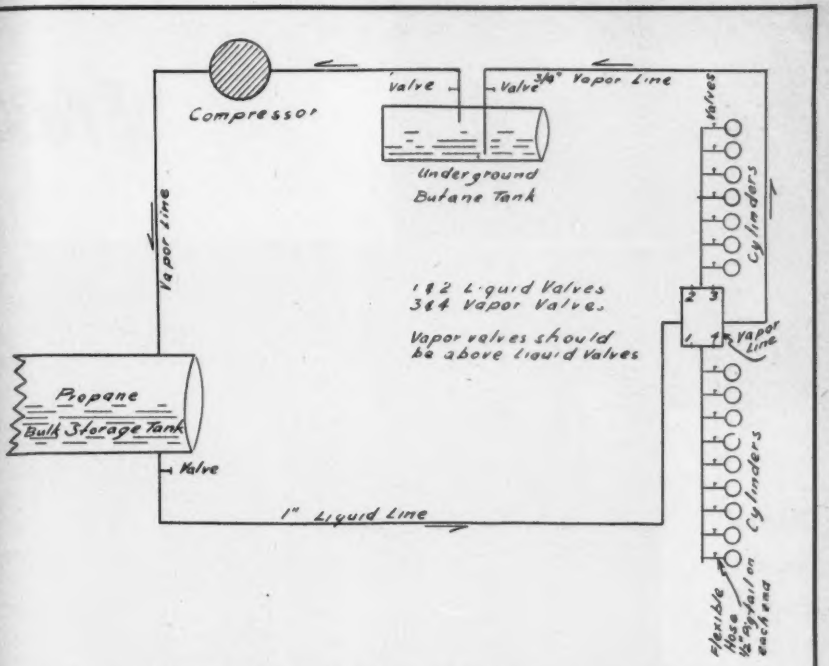


Fig. 1. Drawing showing method of filling propane cylinders.

During the filling operation the high pressure vapor released from the cylinders passes to the bottom of the partly filled butane tank through the dip tube. An absorbing action in the butane takes up most of the vapor pressure so that the tank pressure is raised only a few pounds during the filling of 20 cylinders. This ability of butane to absorb high pressure propane vapor without a corresponding increase in its own holder pressure is the secret of the system. When absorbed vapor brings liquid level in underground tank up to three-quarters full, butane is then transferred to our regular butane delivery tank by way of a valve on top of the dip tube.

We use flexible hose on cylinder connections so that cylinders may be weighed while filling. Also we use two banks of cylinders so that one bank may be filling while vapor is draining from the other. In this way 20 cylinders can be filled in as many minutes.

This method of cylinder filling is recommended for the small operator who needs flexibility, low first cost, inexpensive operation and speed.

The installation here described was designed and installed by Paul M. Jones and the author, both of the Butane Sales Co., Montgomery, Ala.

Officers and Delegates

TOP LEFT: C. L. Parkhill, Parkhill-Wade, Los Angeles, Chairman Pacific Coast Section, L.P.G.A., and Tallant H. Ransome, Ransome Co., Emeryville, Calif., secretary. ABOVE: T. F. Wilson, Bastian-Blessing Co., Los Angeles; H. Lionberger, Woodland, Calif.; E. E. Tattersfield, Electric & Carburetor Engineering Co., Los Angeles.

AT RIGHT: John H. Doane, Smith Precision Products Co., South Pasadena, Calif.; V. E. Pierret, Batallion Chief, Los Angeles Fire Department; T. M. Penny, Smith Precision Products Co., South Pasadena; F. S. Burt, General Petroleum Corp, Los Angeles.

sn Meeting

A LARGE cross-section of the West's liquefied petroleum gas industry met at Fresno, Calif., Feb. 15, for what many termed "one of the most constructive meetings in the group's history."

Seventy-six men, comprising members of the Pacific Coast Section of the Liquefied Petroleum Gas Association and guests, gathered to discuss problems pertinent to the industry and to give representatives going to the national meeting in Cincinnati, Feb. 26-28, an indication of what the organization on the West Coast would like to accomplish.

C. L. Parkhill, Parkhill-Wade, Los Angeles, Pacific Coast chairman, presided at the all-day meeting, bringing many important problems before the group for consideration. The main discussion at the meeting concerned the problems of adequately educating regulatory bodies, fuel distributors, appliance manufacturers and consumers as to the proper precautions and use of liquefied petroleum gas. A committee was formed to consider the new Industrial Accident Commission regulations soon to be formulated by that regulatory body.

With C. E. McCartney, Petrolane Co., Long Beach, Calif., acting as chairman, the Regulations Committee is comprised of Turner Smith, General Petroleum Corp., Los Angeles; W. A. Buehler, Buehler Tank Co., Los Angeles; and Tallant H. Ransome, Ransome Co., Emeryville, Calif.

Placing emphasis on the importance of membership in the Liquefied Petroleum Gas Association, a committee was appointed to enlist new members and to present the story of the organization to new men coming into the industry. The committee is composed of Frank Culver, L. C. Roney Co., Los Angeles, chairman; R. G. Wagner, Truck Fuels, Inc., Los Angeles; S. Selby, Butane Tank Co., Los Angeles; T. F. Wilson, Bastian-Blessing Co., Los Angeles; George Friederich, Fisher Governor Co., Los Angeles; H. M. Ledig, Buehler Tank Co., Los Angeles; R. L. Dixon, Pa-

FIRST BELOW: R. R. Wyker, Ensign Carburetor Co., Ltd., Huntington Park, Calif.; George R. Friederich, Fisher Governor Co., Los Angeles. AT BOTTOM: F. C. Culver, L. C. Roney Co., and R. G. Wagner, Truck Fuels, Inc., Los Angeles.

cific Truck Service, Sacramento; P. F. Murphy, Ransome Co., Sacramento; C. W. Henderson, Butane Gas Service, Capitola, Calif.

Discussed at great length was the importance both of educating persons employed in the liquefied petroleum gas industry and the consuming public as to the use of butane and propane and safety measures that should be taken. A third committee was formed to supervise such education on the West Coast.

This educational committee is composed of F. S. Burt, General Petroleum Corporation, Los Angeles, Calif.; Carl Golden, Standard Oil Co. of California, San Francisco; Ben Temple, Chico, Calif.; R. R. Wyker, Ensign Carburetor Co., Huntington Park, Calif.; George Friederich, Fisher Governor Co., Los Angeles; and Jack Hall, Western Pipe and Steel Co., Fresno, Calif.

To carry on the work of promotion and publicity for the industry on the West Coast, a group to be known as the Programming Committee was appointed. These men will help in the promotion of liquefied petroleum gas. The committee includes R. R. Wyker, Ensign Carburetor Co., Huntington Park, chairman; Lyle Jackson, Jackson Bros., Stockton, Calif.; W. B. May, Mayco, Lodi, Calif.; W. H. Tappan, Tappan Stove Co., Los Angeles; and Paul Lady, BUTANE-PROPANE *News*, Los Angeles.

Plans for a meeting of the Pacific Coast Section of the Liquefied Petroleum Gas Association, to be held soon after the Cincinnati convention, were presented and endorsed by the Fresno group. Stockton, Calif., was chosen for the location of the meeting. The date of the meeting was tentatively set at 30 to 60 days following the Cincinnati convention.

ON THE LEFT: Norman S. West, J. S. West & Co., Modesto, Calif.; M. Nelson, Truck Fuels, Inc., Fresno, Calif. CENTER: W. B. May, Mayco Gas, Lodi, Calif.; Donald West, J. S. West & Co., Modesto, Calif. AT BOTTOM: Ralph Beisner and John W. McMillan, American Pipe and Steel Corp., Alhambra, Calif.

The "Home Service Smile" Earns Its Way

ALL of us have heard the expression, "Service with a Smile." The Home Service department in any organization puts the smile in service. That smile, however, for a long time has been one of mere tolerance on the quizzical countenances of the executives of a company, not only in the liquefied petroleum gas industry, but in the "Public Utilities Gas Company," as well.

KATE SMITH

Ten years ago only a few companies had Home Service departments. Today over 500 Utilities have well organized Home Service departments and employ over 1200 girls. The greatest increase, by far, came about in the past three or four years. This so recent growth is adequate proof of the value of Home Service work.

The Utilities got to a point where something had to be done to change the glum, unfriendly and in many cases down-right hostile attitude of the general public. You remember how you felt towards your gas company only 10 years ago. That is the feeling they had to change. At first, they thought advertising would do it. It didn't, quite. They tried other means and they finally employed hundreds of women to spread the gospel of "Service with a Smile."

● **KATE SMITH, Home Service Director, Atlantic States Gas Co., Inc., New York City, in a paper, "The Value of Home Service Work," presented before the Eastern Section Meeting of the Liquefied Petroleum Gas Association, New York, Jan. 24-25, 1940. —(Abstract by BUTANE-PROPANE News.)**

The aim of Home Service work at first was building up increasingly better public relations — certainly a worthwhile objective for any company to attain. However, the Home Service department, in its quest for good-will, helped in other ways. It aided in increasing the load, it brought about the sale of better and more appliances. And these are the aims, or should be, of every Home Service department:

Building up better public relations.
Increasing the load.
Selling additional and better appliances.

Throughout the country more and more people are becoming aware of gas service beyond the gas mains. Much hard work, of course, has been done to bring about this consciousness.

One of the main reasons is the extensive promotional campaign within the industry. The development of a new selling technique is another. We, in the Atlantic States Gas Co., are not selling hardware — we are selling SERVICE. If any one of you can name any part of this industry of ours better prepared than is Home Service to sell the advantages of gas cookery, gas refrigeration, gas water-heating, I'll pause to listen.

How can Home Service sell this service or advantage? First, through demonstrations. But in giving demonstrations, we give the sales-slanted demonstration of the value of gas in our appliances rather than the old style food preparation type.

The question arises now and again, are demonstrations needed? The gas industry has answered that to the tune of half million dollars and you'll agree that its intent is to constantly keep before the public that gas is *modern* and gas appliances make for a *modern* home.

Yet we still have a long way to go. A recent survey conducted among housewives in the United States, brings us the startling information that half of these housewives don't know gas ranges are modern. Here are some of the questions asked thousands of women, (most of them undoubtedly using gas) and the answers:

First question: Do new gas ranges have:

Automatic lighting—52% said yes; 48% did not know.

Automatic oven heat control—57% yes; 43% did not know.

Heavy oven insulation—51% yes; 49% did not know.

Simmer burners—36% yes; 64% did not know.

To the question, "How do gas and electric ranges compare?" The answers were:

Speed of cooking—56% said gas best; 15% said electric best; 11% equal; 18% did not know.

Coolness of cooking—7%, gas best; 58%, electric best; 1% equal; 34% did not know.

Best cooking results—8%, gas best; 45%, electric best; 8% equal; 39% did not know.

Cleanliness—2%, gas best; 65%, electric best; 3% equal; 30% did not know.

Automatic controls—0%, gas best; 28%, electric best; 18% equal; 54% did not know.

Best looking—4%, gas best; 35%, electric best; 22% equal; 39% did not know.

Think of these figures: Seven and one-half million home makers think electricity is better because they *don't know about* GAS. Don't let it ever be said that it isn't necessary to tell and re-tell at every demonstration the value of gas and the modern features of a gas range. Every salesman, certainly every Home Service girl, should be trained to change this misunderstanding. You and I know that today's gas range has everything the electric range has, plus a lot more, but half the housewives in the nation don't know it. Remember—the sales-slanted presentation of modern gas appliances through a Home Service demonstration program is advertising of the smartest kind.

There are two types of demonstrations—those known as "cooking schools," and home demonstrations often called "kitchen parties."

Another way in which Home Service can sell the advantages of gas i

through "home calls." In making a home call, a Home Service girl tells the customer how best her new range may be used. Most Atlantic States Gas users have not used gas to cook with. We really call to teach them, unbeknown to them; how to bake, using heat control; how to plan and prepare complete oven meals; how to cook vegetables the modern waterless way. Our biggest job and pleasure is to teach them to use the broiler. In most cases in making home calls I have found the broiler either dusty from nonuse or brand new and shiny.

Broiling Believed Best

After once explaining, and often times broiling a bit of bacon, I am assured no more meats will be fried in that particular home. A Home Service girl when making the routine follow-up and instruction call can be trained to take a promotional attitude, too. Isn't it a fact that a woman who has just purchased a new appliance has become keenly kitchen-conscious? I recall a new customer telling me that her range "laughed at the rest of her kitchen." Through a knowledge of modern kitchen planning, there is a chance to lead the customer on to the desire for another modern gas appliances.

We talk too much about our service getting women out of the kitchen. You'll agree the average woman believes that she spends most of her time there. She really doesn't. She thinks she is a hard worker. Don't argue with her. Instead, glorify her job. Make her realize her workshop must be of the very best and modern.

I mentioned two ways Home Service can sell our service or the advantages of GAS. Here briefly, are a few more:

(1) Women's club activities at Company headquarters.

(2) Junior education.

(3) Home Service director's personal acquaintance with women in charge of women's radio programs, commercial houses' home economists, home economics teachers in high schools, centralized schools and colleges.

(4) Get in the news—with activities of the Home Service department.

(5) Last but not least, hold classes for employes.

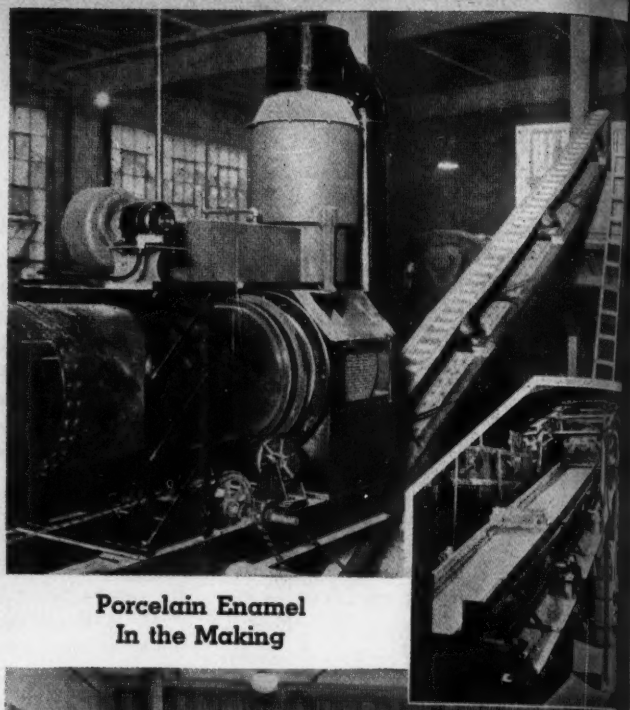
An official of one of the large Utility companies made this comment:

"I feel sure that there is a definite trend to expanding Home Service activities. In attending three conferences within the last two months, this subject has been brought up each time, although the three groups were entirely different. I believe the scope of the Home Service department is due to have considerable expansion probably in public relations and even employe relations. Also, I feel a tendency toward a breakdown in the lost load and retaining present load. Certainly Home Service offers the logical solution to these two."

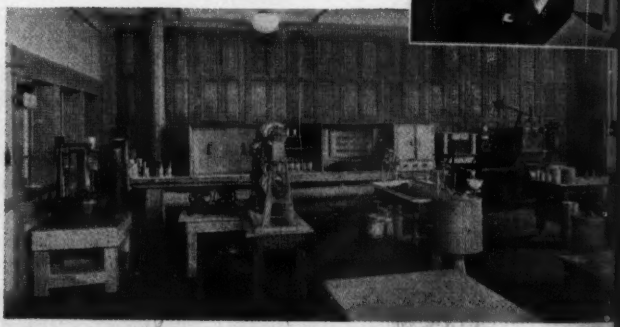
In that last sentence of his lies the justification for my belief that Home Service will be given new opportunities of usefulness, "retaining present load and reclaiming lost load."

Since we are selling service, let's make it "Service with a Smile" and I'll wind up as I started—The Home Service department puts the Smile in the Service.

A few of the many intricate stages in the manufacture of porcelain enamel, as portrayed in a descriptive booklet published by the Porcelain Enamel Institute, Inc., Chicago. Following the smelting process, the smelter is "tapped" and the molten mass is quenched in pits of cold water (lower left), resulting in shattering the material into millions of tiny particles called "frit," a large pile of which is shown in the circle at bottom. The photo at right top shows a typical dryer and classifier for the "frit," and thence it passes through a magnetic separator (the inset at right), where all traces of iron are removed to prevent specking or discoloration. The finished product is finally subjected to a long series of careful tests in the physical laboratory, shown at right. Then comes the equally intricate processes of application.



Porcelain Enamel In the Making



Porcelain Enamel Does a Selling Job

By E. W. GOETZ
Advertising Manager
Chicago Vitreous Enamel Product Co.
Cicero, Illinois

SEEMINGLY, something of the history of porcelain enamel and its manifold uses down through the years, even to the present day, should hold direct interest for the considerable army of men now engaged in the various activities of the liquefied petroleum gas industry. For whether one refines the fuel, builds a bulk or refilling plant, or sells directly to the domestic consumer, continued successful operation depends upon the appliance that burns the gas, and we all know that the three principal sales attributes of gas appliances are efficiency, durability and appearance.

It is the last two qualities I wish to discuss, as they are definitely linked with the subject of porcelain enamel, without which innumerable household appliances would be devoid of surfaces that are heat-resisting and which, at the same time, permit the preservation of original beauty.

Effect on LPG Industry

Few commercial products are more common than porcelain enamel. In fact it is so universally used in all modern homes and places of business that it probably fails to attract the attention it deserves and that it would receive were its uses more restricted. To emphasize those which concern the LPG industry is the purpose of this paper, by outlining some of the basic facts about this durable product finish.

The history of porcelain enamel dates back so far that nothing is known of its origin, except that for thousands of years it has been used, and as an attest of its durability and antiquity we need go no further than such evidences as today may be seen in museums, art schools and private collections of articles which have had their important places in the lives of ancient peoples—and all such testimony in states of remarkable preservation.

This quality of resistance to wear —durability—is directly due to the fact that porcelain enamel is mineral in composition. And a mineral substance is harder, more durable, more efficient, than one made out of vegetable substance. (Principally, it is composed of silica, borax, soda, and zinc oxide.) But more than being a mineral, alone, it is a mineral combination that has been smelted at temperatures that make it glass hard, being first reduced to a molten mass and then fired at 1550° F. until it is fused, or welded, right onto its supporting metal making it an integral part of the metal, itself.

There is one factor concerning porcelain enamel of today that excels that made of old. It is the new acid-resistant finish. This quality and the wide range of colorings that are used

distinguish the modern from the ancient and inseparably blend the beauty and durability that has resulted in the wide acceptance of this metal for a finish upon appliances used with liquefied petroleum gas, and in other fields too numerous to mention.

Because porcelain enamel is immune to the wear of time; because it resists all dirt and stains, is easy to clean and fadeless; and because it is impervious to temperature extremes in climate and to effects of outward heat, it is an ideal finish for appliances which are made not only to serve women's needs, but to cater to their instinct of beauty.

In fulfilling such a mission, porcelain enamel provides the appliance salesman, and hence the dealer and distributors, with a sales aid that is invaluable and that is performing its very important part in the rapid spread of the liquefied petroleum gas industry throughout this country and the entire world.

Specially Designed Truck Simplifies Installations

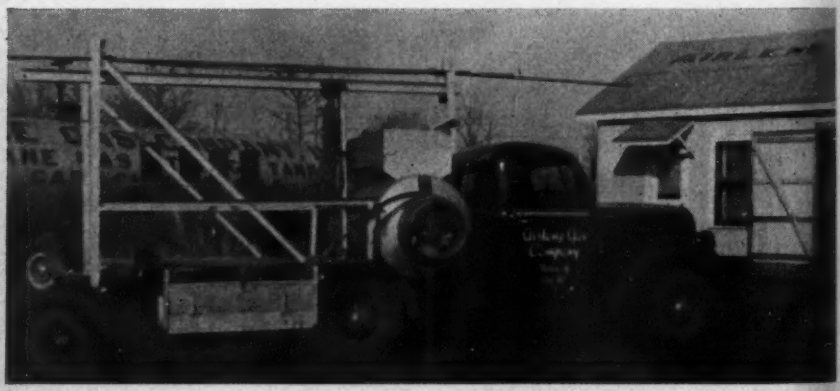
The Airlene Gas Co., of Fulton, Ky., has for three months been trying out a specially designed truck for installation jobs and has found it to exactly meet the company's needs, according to P. G. Boyd, vice president.

The frame work on a 7-ft. square bed is of welded construction and bolted three times at each contact. The chassis is a ¾-ton model Ford, with 8-ply rear tires and over-load springs.

On top is a pipe rack with room for many joints; a trolley and block and tackle on a 4-in. I beam allows the handling of 200-gal. systems with ease, and in most cases they can be unloaded directly into the excavations. The tool and fitting boxes are behind each rear wheel. There is a box on top of the tank for picks, shovels and odd items. The fuel tank is a 300-gal. unit, fastened directly to the frame with angles welded to the tank. (See photo on this page.)

The use of this truck is claimed to have reduced the cost of installations and increased the efficiency of the workmen.

The Airlene Gas Co., while featuring domestic installations, has equipped several industrial plants with butane for fuel.



Specially designed installation truck of the Airlene Gas Co., Fulton, Ky. With all tools and equipment handy, labor costs are at a minimum.

Gas ranges are ordered in carload lots and from 200 to 400 are warehoused by Worthington Gas, Inc. Eight delivery trucks in use.

A City Gas Utility Goes Rural

ALTHOUGH but a little more than one year has elapsed since entering the liquefied petroleum gas business, Worthington Gas, Inc., Worthington, Minn., now has 78 active dealers in Minnesota, South Dakota and Iowa. It is expected that 50 additional dealers will be signed up in 1940. Philgas is handled exclusively in the 33 counties in which the company operates. A new franchise for the enlarged area was recently signed.

Large Stocks Are Warehoused

Between 200 and 400 gas ranges and other appliances are warehoused at Worthington and Pipestone, Minn., and at Rock Rapids, Iowa, for convenient shipment to dealers. Other sub-stations are planned for Canby and Marshall, Minn. Officers of the company are E. O. Olson, president; H. N. Hoaglund, vice president, and Lee Little, secretary-treasurer. President Olson is also president of the Worthington Creamery and Produce Co., which operates 50 cream and poultry trucks in the same territory as that served by the gas company and whenever emergency service or rapid deliveries are required that cannot be handled by the eight gas service trucks, the creamery trucks are commandeered, which results in exceptionally proficient service.

Five Thousand Cylinders Used

While the territory is so far spread, this combination delivery plan has enabled the company to make an almost perfect service record. Altogether, more than 5000 LPG cylinders are used in this expansive gas business.

The formation of Worthington Gas, Inc., is the outgrowth of a decision of the Worthington Gas Co. to extend its services beyond the city mains and the signing of a Philgas franchise. The expansion of the rural business has gone ahead rapidly.

The Worthington Gas Co. serves a carbureted water gas to the residents of Worthington, a city of approximately 5000 inhabitants.

THEY MOVED MOUNTAINS OF EARTH

Butane Equipment Has Amazing Economy Record in Handling 7,500,000 Cu. Yds. in Two Years at Cajalco Reservoir.

By PAUL LADY

CAJALCO Dam, principal terminal storage of the great Colorado River aqueduct, reached official completion on Nov. 19, 1939.

Roaring into the vast reservoir at the rate of 270,000 gals. per minute, water from the distant Colorado River began filling the big basin, which is the terminus of the main aqueduct and the headwater of the aqueduct's distribution system.

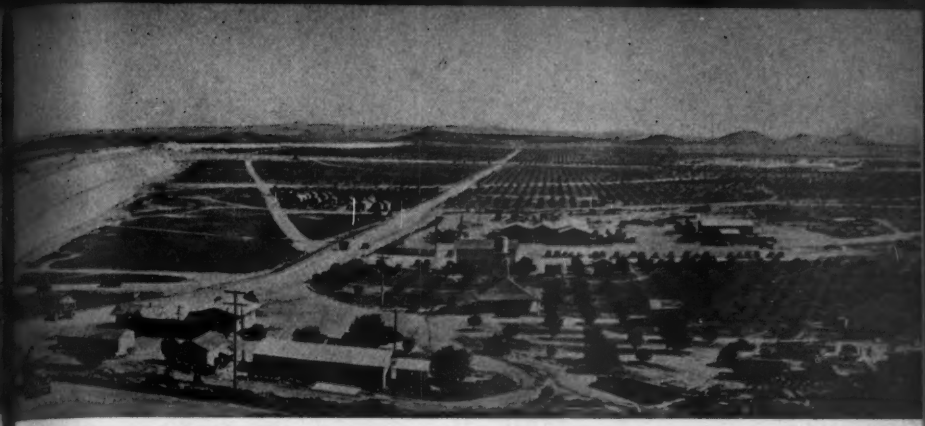
The completion of this huge project was only another step in the gigantic task of flowing water from the distant banks of the Colorado River to the fertile plains of Southern California. Yet, to the rapidly growing and comparatively new liquefied petroleum gas industry, the completion of this huge project is a major triumph.

To build the great earth-filled Cajalco dam and dike, it was necessary to transport an aggregate of 7,523,000 cu. yds. of earth; that demanded careful planning, skillful operation.

Faced with what is said to be the greatest earth-moving project in the history of the Southwest, engineers in charge knew that the type of equipment used for transportation, and the fuel used to move the equipment, were among the important phases of the job. To do that job, with the greatest economy and speed, the engineers chose butane.

Cajalco Reservoir, 242 miles west of the Colorado River, is located in a natural basin 10 miles southwest of Riverside, Calif. The reservoir water is checked by two earth-filled structures, the Cajalco dam and dike.

The dam is located on the western end of the basin, completely blocking a wide canyon from top to bottom. Containing approximately 3,000,000 cu. yds. of tightly compacted earth, the dam has a maximum height of 210 ft., is 2200 ft. long at its crest, and is 1700 ft. thick at its base. It appears to be a part of the surrounding terrain, as the dam is level with the hills on each side of the canyon.



Cajalco dyke and basin. In the foreground are several of a fleet of 30 butane-equipped trucks carrying dirt to the top of the dyke. In the center, right, are the Griffith Co.'s administration building and shops, but this spot is now 50 ft. under water in the present mammoth lake.

Along the northern rim of the basin is the Cajalco dike. Although not as high as the dam, the dike is more visible as it has been built across a long stretch of relatively flat ground.

The dike contains about 4,000,000 cu. yds. of compacted earth, and, like the dam, it is paved on the upstream side with a blanket of reinforced concrete to prevent wave erosion. With a maximum height of 94 ft., the dike becomes the horizon to an observer inside the reservoir.

The reservoir is approximately two miles wide and four miles long. Held in bounds by the two great earth-filled structures, the reservoir water will reach a capacity of 107,000 acre feet or roughly 32,600,000,000 gals. of water.

Work was begun at Cajalco by the Griffith Co., of Los Angeles, in December, 1935. The earth moving job was completed and trucks taken from the project in November, 1937. A total of 24 months was required to move over 7,000,000 cu. yds. of earth, finishing the project more than one year ahead of schedule.

To do the job of moving the great mountains of dirt from pits some distance from the dam site, executives of the company decided that equipment then on hand was inadequate, making it necessary to purchase 30 new motor trucks. Upon arrival, each truck was converted to use butane. E. E. Tattersfield, of the Electric Carburetor and Engineering Co., located in Los Angeles, was in charge of the conversion job. Each truck had regulator, proportional mixing valves and two 50-gal. butane tanks.

To provide fuel for the fleet of trucks, two 7500-gal. permanent storage tanks, including pumps and meters, were installed at the reservoir site. Parkhill-Wade, of Los Angeles, was in charge of this work.

As the transportation of butane from the refinery to the job was a major problem, Griffith Co. engineers decided on the plan of hauling

Equipment That Helped to Build The Mammoth Cajalo Dam

AT TOP: The 2600-gal. transport truck that carried butane to the Cajalco dam project. ABOVE: Two 7500-gal. tanks used for butane storage. AT LEFT: Several of the butane-powered trucks hauling dirt to the dyke.

their own fuel. To do this work, a 2600-gal. butane transportation truck was put into service, making the 70-mile trip to the refinery three times every 36 hours.

The 30 butane equipped trucks were on the job at Cajalco by December, 1935, and the dirt was literally flowing onto the dam and dike at the rate of 100,000 cu. yds. a week. Each truck had been constructed to carry 10 cu. yds. of dirt; however, due to the extra power developed by using butane as a motor fuel, engineers on the job found that an extra 5 cu. yds. could be heaped onto the dump bed; thus, each truck was loaded with 15 cu. yds. Three seven-hour shifts were maintained for the transportation of earth, placing the trucks in continuous operation for many months at a time.

Materials for the dam and dike were taken from pits located within the reservoir area, but no excavation was permitted within one-half mile of the dam and dike, thus, trucks were forced to make trips of a mile or more from the pits to the dump. With each truck overloaded and working at top speed, equipment was under a constant strain at all times.

Recent methods of moisture and compaction control were utilized and all of the construction equipment was of the most modern type. To insure proper compaction, the soil had to contain exactly the right amount of moisture, a different amount being required for each type of soil. The required moisture was added before the material was excavated.

A battery of 2- and 2½-yd. shovels loaded the earth onto the dump trucks at the pit. When the trucks had reached the dump site at the dam or the dike, the earth was deposited in windrows, where it was spread and rolled into approximately 6-in. layers. The spreading was done with Diesel-driven graders and bulldozers. Compaction without stratification was effected by sheep's-foot rollers, drawn in groups of three by 75-hp. tractors.

The total cost of all butane equipment, including 30 truck installations, two 7500-gal. storage tanks, installed, and one 2600-gal. transport truck

The Colorado River aqueduct from Parker Dam to Cajalco Reservoir.

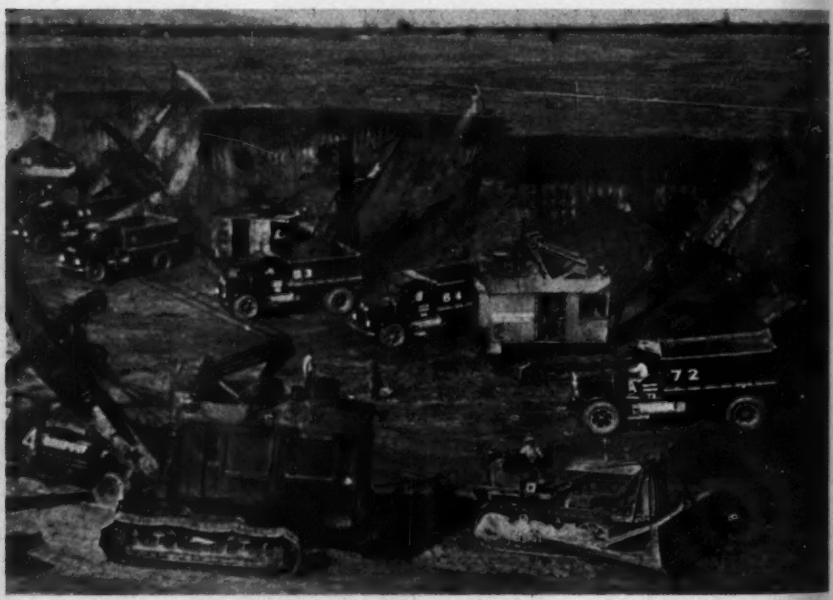
came to approximately $15,000, net.

The contract rate of butane for the Cajalco project was figured at 3½ cents per gal. (exclusive of tax) with ½ cent per gal. allowed for delivery, making a total per gallon cost of 4 cents. Figuring the total butane used on the job at 1,250,000 gals., the cost for fuel was $50,000—including the amortization of the 2600-gal. transport truck, costing approximately $4000.

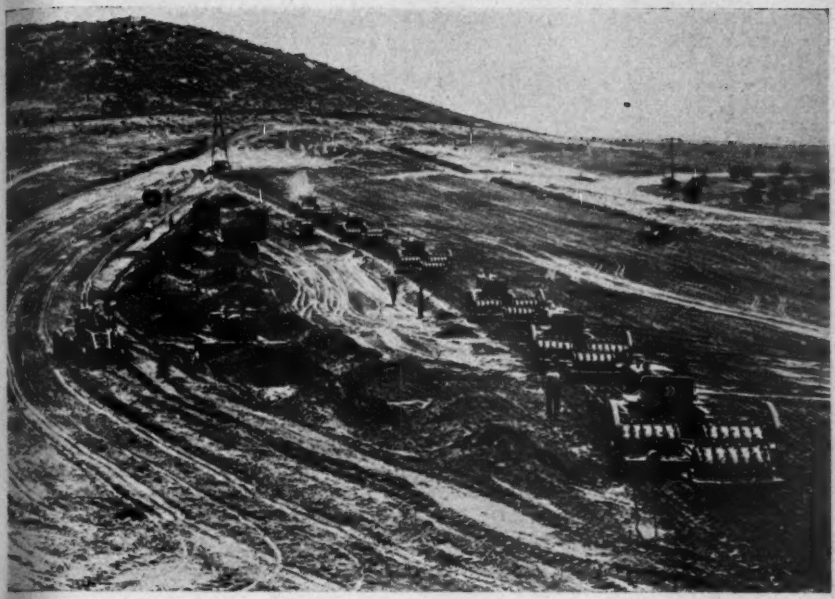
With the computed price of gasoline at 10 cents per gal., delivered (exclusive of tax) officials figured a saving of 6 cents per gal., or a saving of $75,000 on fuel alone. Other savings are more difficult to ascertain; however, the cost of oil, engine replacements and mechanics' labor was much lower when compared with similar costs on equipment operation on any other type of fuel.

Operation experiences showed that the life of lubricating oil was at least five times longer, and with no dilution, than of oil used with other fuel. Valve grinding was reduced one-half, for no carbon formed, and the life of engines was almost twice as long.

Griffith Co. officials state that 29 of the 30 butane equipped trucks—one was wrecked on the job—are still in operation, doing efficient, heavy-duty work. Such a record, after two years of exacting service at the Ca-



Always there was a butane-fueled truck awaiting another load of select material for the dam and dyke. *(Photo courtesy of The Metropolitan Water District of Southern California.)*



Spreading and rolling at Cajalco dam. *(Photo courtesy of The Metropolitan Water District of Southern California.)*

jalco project, is indeed a tribute to butane operation.

The use of liquefied petroleum gas for large construction jobs is proving more popular in every section of the country as contractors become more aware of the economy and practicability of the fuel. In the West butane is accepted with special favor and used on many large jobs where every type of equipment has been in operation.

At Shasta Dam, located on the Sacramento River near Redding, Calif., butane has been in use since 1938. One of the largest construction jobs in the West, Shasta Dam has been a wonderful proving ground for butane, both for industrial and domestic use. Trucks on the Shasta project are butane equipped while living quarters are using butane for all domestic purposes. Reports from engineers in charge state that this fuel has been satisfactory in every respect wherever used.

Other large construction jobs where butane is now in use include: Prado Dam, located on the Santa Ana River in southern California; the Imperial Canal at Imperial Valley in southern California, and Parker Dam on the Colorado River.

Big jobs, recently completed, where butane was used, in addition to Cajalco Reservoir, are Metropolitan Aqueduct and All-American Canal, all in southern California.

Kerrville, Texas Butane Plant

TOP: Two compressors and 18,000-cu. ft. Kemp carburetors and blower. ABOVE: Heat exchanger, liquid pressure reading regulator, solenoid valve and regulator. RIGHT: The 200,000 B.t.u. hot water heater for heat exchanger. CIRCLE: City Manager A. P. Hancock.

Heaters Build Load

Gas Holders and Plant

By A. P. HANCOCK

City Manager, Kerrville, Texas

ANOTHER record tumbled into the discard for the City of Kerrville (Texas) Gas Department, when recently compiled tabulation charts revealed that 1939 surpassed all previous years in consumption of butane when 39,355,000 cu. ft. were sold. This total topped last year's 36,400,000 cu. ft. by 3,000,000 cu. ft.

Taking over the gas system in 1935 when only 368 consumers were tied on the mains, the city has marched abreast of the yearly growth with extensive improvements and the plant today stands as one of the important butane systems in the United States.

Five years ago only 20,299,000 cu. ft. were consumed, 1936 saw 464 consumers use 28,647,000 cu. ft., 1937 with 542 consumers used 36,736,000 cu. ft., 1938 with 581 consumers saw the total slip slightly through a mild winter to use but 36,400,000 cu. ft., and the 1939 total was set by 673 consumers.

The greatest consumption for a single month was set in January, 1940, as a lengthy cold wave caused some 6,855,000 cu. ft. to be used by Kerrville butane gas users.

Altogether, there are about 22 miles of mains which are 4½ in., 3½ in. and 2 in. About one-third of the mains are under high pressure of 20 lbs., and the remaining two-thirds under low pressure. A five-ounce pressure is maintained at the appliance.

The hourly plant capacity is 36,000 cu. ft. and the B.t.u. value of the air-mix gas is 550. The rate schedule is 1500 cu. ft. (minimum charge), $1.50; next 3000 cu. ft., 75 cents per M; and all over 4500 cu. ft., 60 cents per M.

A municipal policy prohibits the stocking and selling of gas appliances and this fact has curtailed the number of possible customers. Out of a potential of 1200 meters in this city of more than 5000 population, it is believed consumers would soon total 1000 if the city sold appliances.

SELLING

Making Buyers Out of Lookers

Carefully checked estimates show that five out of every ten people who come into an appliance store to look fail to buy. What does this mean? It means that one branch of the selling organization, advertising, has done its job. For it has created enough interest to induce the prospect to call at a store and see for herself. But it means also that another branch of the organization is not doing more than a 50 per cent job. That is the selling branch.

It is probably impossible for even the most aggressive merchant to sell every customer who comes into his store. But it certainly looks as if the percentage of lost sales could be substantially reduced. In fact, many gas appliance merchandisers have proved that the gap between lookers and buyers can be closed to hardly more than a crack.

The brunt of this job falls on the floor salesman. The prospect who comes into a store to look, is entitled to a straightforward, intelligent and honest sales story. If the questions that are in her mind when she enters the store are properly answered, there is no real reason why she should not buy.

This means that the floor salesman should know all the features and advantages of his product. This information is available in literature ordinarily put out by the manufacturer; literature which not only gives detailed descriptions of the merchandise, but gives the color and background of the product too. This sort of material is invaluable, and should be conscientiously studied by the salesman who wants to be in a position to sell.

But there is a further aid which should not be overlooked. The really effective salesman is the one who knows his product from the users point of view. If it is a gas range, he should know what kind of a baking job it does, how it broils, how to keep it clean. If it is a gas water heater, he should know about it in terms of washing, scrubbing, bathing, hair rinsing and the like. And so with other appliances. Possessing this kind of knowledge, a knowledge which is tied in with homely, everyday things about a household, his sales presentation will be convincing and thorough. He will be able to arouse that interest, already stirred by the advertiser, to the point of buying.

The salesman who is ashamed to learn to cook, will never make a good gas appliance merchandiser!

Telephone Technique

The telephone can save you time, energy and sales. It can lose them for you, too. It is a useful and convenient instrument in the hands of one who uses it intelligently. But it is a dangerous thing to play with. The smart salesman is the one who studies

the telephone and learns proper telephone technique.

There are lots of things to learn about using the telephone. For instance, you should learn when and when not to answer it. Nothing is quite so annoying as the interview which is constantly interrupted by a telephone. Too many men grant an appointment for a personal conference and then think nothing of answering the telephone in the midst of it and carrying on long-winded conversations, while the guest cools his heels. You would not allow a third party in person to break into an interview. Why permit a third party on the phone to interrupt your conversation?

A good rule to follow is this: When you are occupied with a customer or an appointment of any kind, have someone else take your telephone calls. Call them back later.

Here's another hint: Quite often telephone calls come at most inconvenient times. The party on the other end of the line cannot know this. But how grateful a person is when the caller says: "Now if this is a bad time for you to talk, I will call back later!" You can win friends and perhaps complete sales if you will make a practice of always asking the other party if he has time to talk to you.

Knowledge of voice placement makes for good telephone technique, too. Some people seem almost compelled to shout at the top of their lungs over the telephone. Others approach the instrument as if afraid it is going to reach out and bite them. They become tongue-tide, weak voiced, inarticulate. There is a happy medium between these two extremes, and the salesman who conscientiously tries to develop a good telephone technique would do well to find where that happy medium lies.

There are many ways a salesman can use a telephone to his advantage and profit. Suppose, for example, you have made an appointment to meet a customer at 2 o'clock. One-thirty comes and you realize it is impossible for you to keep the date. You can save the day and perhaps the sale by stepping to the phone, calling the party and explaining the situation. Nobody minds another person being late provided he knows before hand that he will be delayed.

You can secure valuable service from the telephone by using it as a follow-up too. Many sales take two, three or more interviews. It is a good practice to keep such sales alive by giving the prospect a ring and reminding him or her that you have them in mind.

Buy Now

The road to hell is paved with good intentions, and the road to no sale is paved with intentions to buy tomorrow. It is the wise salesman who doesn't put too much faith in what the prospect says he is going to do tomorrow. People who can't buy today, are always going to buy next week or next month. But if a person can't afford to buy now he never can afford to buy. It's the salesman's job to say so in such convincing terms that a competitor won't have an opportunity to elbow in while the prospect is wavering over a decision.

THE EVOLUTION OF THE OVEN

—1—

ABOVE (1): Prehistoric roasting oven.

BELOW (2): Ancient barbecue oven.

RIGHT (3): Pueblo Indian oven.

—2—

—3—

"The Evolution of the Oven"—shown in drawings on these facing pages—is a humorous but accurate story of what has been essential to woman's work since earliest time, the best means the passing age afforded to cook the family food. Reproduced through the courtesy of "Flamo Sales Flashes," a publication issued by the Standard Oil Company of California.

From Hand Roasting Over An Open Fire to Mi' Lady's Modern Kitchen.

—4—

Cooking in today's liquefied petroleum gas oven is not a chore, as in earlier years. With automatic thermostatic control even a poor cook can attain success, while to a GOOD one the modern gas range is a joy forever. Yet, it is claimed that 85% of all kitchens are using obsolete stoves without oven heat control. Gas may be regulated to provide exact temperatures.

—5—

LEFT (4): Colonial Dutch oven.

ABOVE (5): Ben Franklin Pioneer oven.

BELOW (6): Modern gas oven, the delight of every woman's heart.

—6—

"Toppers Again by Roper in 1940" was the theme of the Geo. D. Roper Corp. sales convention in Rockford, Ill., January 3-4.

In Convention Halls and Committee Room

LPG committee of the California Natural Gasoline Association in action on a summer's day. From left to right: E. J. Squire, Turner Smith, A. N. Kerr, C. L. Parkhill, Jno. S. Gallagher (chairman), C. L. Hutchings, A. J. Bush, G. N. Hile. Other committee members, not in photo, are F. S. Burt, A. L. Hendrickson, Fred Hough, C. E. McCartney and F. O. Olmstead. (Story page 75.)

More than 100 members of the Detroit-Michigan Stove Co. gathered in Detroit in December for the company's annual sales convention.

PITTSBURGH EQUITABLE METER COMPANY
MERCO NORDSTROM VALVE COMPANY

Specialists in Fluid Flow Problems

To us, as specialists in measuring and controlling fluid flows for over 50 years, propane and butane problems are commonplace. The measurement, regulation and control of liquids and gases of various natures has been our special province and our accumulated experience has been invaluable in developing equipment for the fast growing Liquefied Petroleum Gas industry.

Our engineering department and complete laboratory facilities are always available to assist in solving problems in fluid measurement or control.

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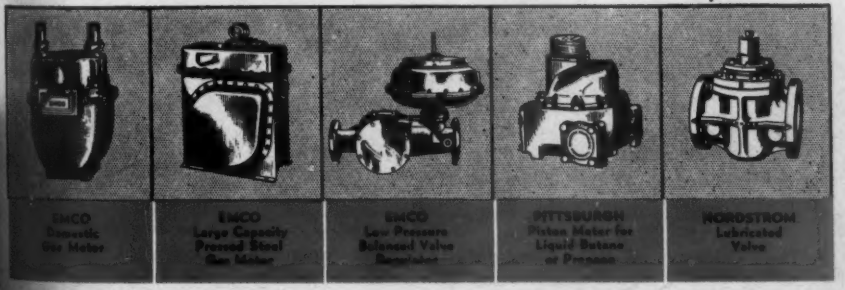
EMCO *and* NORDSTROM *products for the Liquefied Petroleum Gas Industry*



EMCO Domestic Gas Meter | EMCO Large Capacity Pressed Steel Gas Meter | EMCO Low Pressure Balanced Valve Regulator | PITTSBURGH Piston Meter for Liquid Butane or Propane | NORDSTROM Lubricated Valve

Gillham, Ark., School Installs Butane

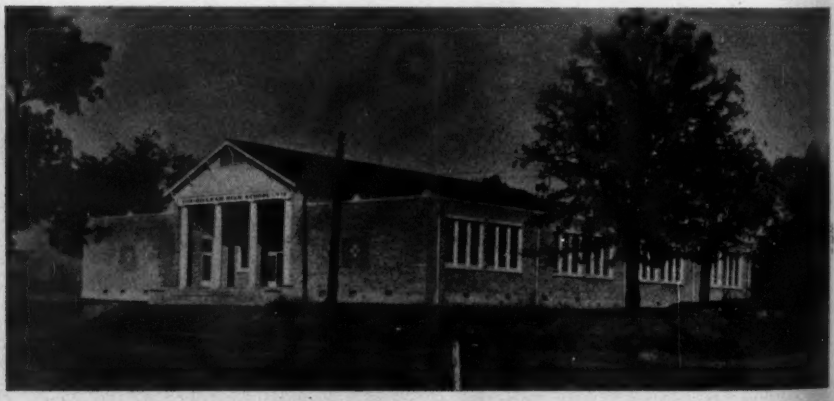
THE first installation in Arkansas of a butane gas system in a consolidated school is that of Gillham Consolidated School District No. 47 at Gillham, Ark., according to W. H. Taylor, president of the Butane Gas Service Co., Inc., of Mena, Ark. This company made the installation.

This progressive school is located in a little town of less than 200 people about 15 miles from the Oklahoma line in a new modern brick building of WPA construction, 100 by 130 ft., containing 14 classrooms, office, library, gym, and auditorium having a capacity of 400. The heating system contains nine Empire circulators and two Adams radiant heaters, supplied by a 1000-gal. gas plant.

The expense of heating operation for October, November and December, 1939, was only $36, or at the rate of $12 per month. The school has 15 teachers and over 600 students, besides those in the wing schools at Ozark, King and Grannis.

Superintendent Clyde Thomas has high praise for the economy, convenience and cleanliness of the butane gas. The school project cost $50,000.

The Butane Gas Service Company is a pioneer of the butane gas industry in western Arkansas, and in addition to Mr. Taylor, is composed of W. G. Benton, vice-president, and Bethel Taylor, secretary and treasurer. Its trucks cover a radius of 300 miles, operating from its storage tank at Mena, a scenic little city of about 3500 people in the hills of Arkansas, which is the home town of "Lum" and "Abner," the noted provincial radio artists. The father of "Lum," a prosperous lumberman and president of the leading bank, was one of the first users of butane gas in the territory, installing plants at both his residence and bank.



The Gillham, Ark., consolidated school, now equipped with butane circulating and radiant heaters.

Insist on

BU-GAS

REG. U. S. PAT. OFF.

Today's leading liquefied petroleum gas for heavy-duty internal-combustion engines, industrial fuel requirements, and heavy-demand domestic heating.

FIRST to make Butane generally available for commercial purposes, Standard Oil has ever since kept BU-GAS *first* in:

Quality. BU-GAS insures uniform performance through adjustments for seasonal conditions. It is non-corrosive and moisture free.

Availability. BU-GAS is manufactured and available for delivery at six refineries. Ample tank-car equipment assures prompt shipment.

Distribution. BU-GAS Distributors operate the largest fleet of high-pressure tank-trucks in California, Arizona and Nevada, assuring prompt deliveries any time, anywhere.

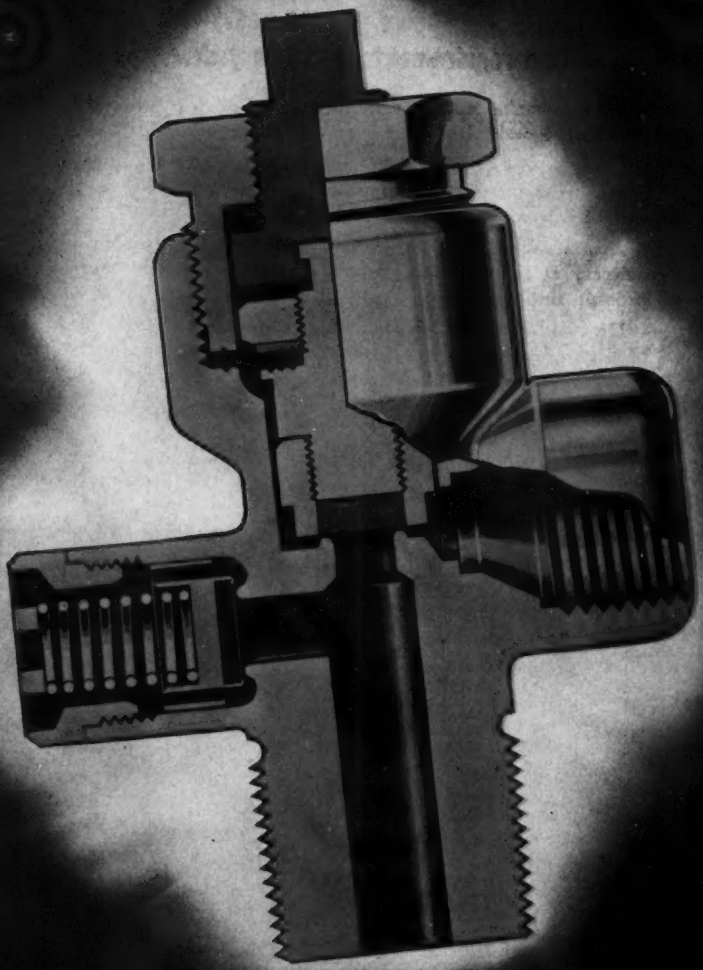
Development of Equipment. BU-GAS Distributors and Standard Oil's technical experts have always lead in the development and installation of utilization equipment.

For prompt deliveries and further information call any of the following authorized distributors

Ransome Company: Emeryville, Sacramento, Selma and Redding, California. Reno, Nevada.
Frank Hennessy: San Jose, California
Petrolane Ltd.: Bakersfield, California
Crook Company: Los Angeles and El Centro, California
Frank H. Bagley: 29 Palms, California
Windolph Bros.: Santa Ana, California
Fannin's Hardware: Phoenix, Arizona
Home Ice & Fuel Co.: Tucson and Wilcox, Arizona
Foster & Long: Safford, Arizona
A. & B. Schuster: Holbrook, Arizona
Northern Butane and Plumbing Co.: Prescott, Arizona
Matlock Electric Supply: Globe, Arizona

STANDARD OIL COMPANY OF CALIFORNIA

EXTRA PROTECTION PERFORMANCE PROFITS . . .



FROM REGO CYLINDER VALVES

The advanced leadership of Rego engineering has been giving the Butane-Propane industry, since its infancy, extra protection . . . extra performance . . . extra profits. HERE'S WHY . . .

- **LEAK-PROOF DIAPHRAGMS** — Exclusive design incorporates diaphragms of flexible composition giving long life and allowing for unrestricted movement of valve seat.
- **POSITIVE FULL OPENING** — Valve seat disc holder and stem are attached to diaphragm. There is no dependence on springs to effect full opening.
- **TIGHT CLOSING** — Seat disc of a resilient composition assures positive shut-off.
- **"POP" ACTION SAFETY VALVE** — This feature assures full relief of excessively high pressures due to overfilling or fire.
- **EASILY MAINTAINED** — All parts subject to wear or fatigue can be easily and inexpensively replaced.
- **CAREFULLY SELECTED MATERIALS** — All materials used in the construction of these valves resist the action of butane and propane in both the liquid and gaseous phases.

Assure utmost safety and economical operation by specifying RegO cylinder valves.

The **BASTIAN-BLESSING** Co.

258 E. ONTARIO STREET CHICAGO, ILL.

Pioneers in equipment for using and controlling high pressure gases

STEEL CUTTING WITH BUTANE

SINCE equipment for the welder has been improved and adapted for materials other than acetylene, liquefied hydrocarbons are steadily gaining in popularity for cutting steels. Cylinders have been manufactured with adequate filling connections and standard fittings for attaching volume and pressure regulators. At points where liquefied products of petroleum are available, filling of cylinders becomes a mere routine.

When natural gasoline or cracking plant vapors are condensed and rectified to produce a product of a definite vapor pressure, the overhead material from the fractionating columns is liquefied and stored under sufficient pressure to prevent re-vaporization. Convenient nozzles are attached, either to the receiver after condensation, or to the storage vessel. An indicator pipe is inserted in the cylinder to show that sufficient outage is obtained when liquid begins to spray, instead of the steady flow of air or vapor. At this moment, the vent line is closed off, and pressure is applied to the cylinder to assure sufficient filling under pressure. The cocks are closed, and the cylinder is then ready to be moved to the shop,

Steel cutting with butane, instead of acetylene, in Continental Oil Company's Wichita Falls, Texas, refinery. Note that the drum car has rubber wheels, and that the handles also serve as rear supports when laid down.

ENSIGN

BUTANE CARBURETION

FOR TRUCKS, TRACTORS, BUSES
AND STATIONARY ENGINES

PROVIDES CORRECT
GAS-AIR MIXTURES
AUTOMATICALLY FOR
EVERY LOAD AND SPEED

ENSIGN

ACCEPTED STANDARD AMONG LARGEST OPERATORS FROM COAST TO COAST

Butane, when properly carburetted is the finest of motor fuels. Ensign Carburetion Equipment is accurately designed to meet every engine need with extra performance in power and economy of operation.

Write us for complete information. Our competent engineering staff is at your service.

ENSIGN CARBURETOR CO., LTD.

HUNTINGTON PARK, CALIF. • DALLAS, TEX. • CHICAGO, ILL.

or to points of utilization nearby or at a distance.

A convenient method of using the butane cylinders with the oxygen cylinder as a companion is to build a truck or cylinder car with small diameter rubber wheels. The head board is wide enough to contain both cylinders, and is attached to the truck so that the leading edge may be slipped beneath the base by slightly tilting the cylinders from an upright position in the storage room. Just above the head board, a sheet of steel is welded to the frame of the truck and cut away to fit the contour of each cylinder to prevent rolling from side to side or striking each other when moving from place to place. A similar sheet is welded to the frame, and cut in a like manner, slightly more than half way from the head board to the top. A locking device, either a length of chain with a tightener or two pieces of strap iron, is attached to hold both cylinders firmly.

Rubber Tires Take the Shock

To further increase the practicability of the truck, the handle bars are tilted backward and curved so that they also form a back rest, or legs for the truck to be stood with the cylinders horizontal when laid down. When in use, the truck is stood upright, resting upon both the wheel and the head board, and the rounded handle bars serve as a support upon which the welding hose is coiled. Rubber tires take the shock from the cylinders as the truck is wheeled across the lot, and make it much easier for an operator to move the unit from the shop to any point where cutting is required.

With a new type head, which is provided with various types of tips, the style adapted to butane is screwed in the tool and the welder adjusts the pressure and volume regulators to suit the job at hand. A clean, quick cut can easily be made on any thickness of metal which the welder is using. The quantity of butane which is required for various jobs of cutting is said to be much less than when acetylene is employed for the same purpose. A start in cutting is a trifle slower than acetylene, but when the heat is once generated for cutting to begin, the operation from that point is said to be much more rapid. The operator in the picture is a butane enthusiast and is demonstrating a cut on a piece of badly rusted and corroded four inch pipe by splitting it from end to end.

◆ ◆

Standard Oil Starts New Natural Gasoline Plant

The Standard Oil Co. of California has started construction of a gasoline extraction plant near Coalinga, Calif.

A grading of the plant site and collection of materials is under way and it is expected that the plant will be extracting natural gasoline about March 10th. It will have a capacity of 20,000,000 cu. ft. per day, with provision for extensions as required by new completions and a later inclusion of gas from the Coalinga Nose Area. Initial production of natural gasoline is estimated at 2000 to 3000 gals. per day without any provision at this time for butane or propane production. The approximate cost will be $275,000.

It has been stated that the new plant is required because of the increase of gas production at Northeast Coalinga, and the prospects of even greater production in that area which is expected soon.

THE VERY *Idea*

Pacific's New

MERCHANDISING SET-UP SWEEPS THE FIELD

Now, with a stock of just:

★ 10 FURNACES (4 Floor, 3 Single Wall Register, 3 Dual Register Furnaces), and ★ 10 CONTROL COMBINATIONS (standard interchangeable packages of manual and thermostatic controls, all A.G.A. Certified) and ★ 3 BURNER ASSEMBLIES (for Natural, Manufactured, or Liquefied Petroleum Gas Fuel) ready to connect in less than 2 minutes . . .

YOU CAN show and deliver FROM STOCK what is the equivalent of 300 FURNACES!

★ You'll have the correct size and type of Floor Furnace . . . with the RIGHT BURNER for any fuel . . . and the RIGHT CONTROLS to suit the needs of any customer . . . for IMMEDIATE DELIVERY . . . ready to connect to the job with minimum of effort and time and the assurance of maximum satisfaction! Let this 100% effective new Pacific merchandising plan broaden your horizon and zoom your profits! Write now for details.

26 SUCCESSFUL YEARS
...and still growing!

PACIFIC GAS RADIATOR COMPANY
Huntington Park, California, Dept. BN-3

FLOOR FURNACES • FORCED AIR UNITS

Pacific

BASEMENT FURNACES • UNIT HEATERS

Bottle Gas--

Progress and Possibilities

THE term "bottle gas" may be rather misleading and certainly restricted. The term "bottle gas" really applies to the type of service employing portable cylinders of about 23 gals. capacity, and less, in which two cylinders are most commonly installed at one time—one cylinder providing service until it becomes empty, at which time it is turned off and the other full one used until the empty one can be exchanged for another full one. Another type of bottle gas service involves but one of such cylinders which is filled each month from a truck.

J. W. MARTIN

As this convention primarily represents organizations operating in the South and Southwest, bottle gas service in its strictest sense is of very little interest as that type of service has not found ready acceptance in this area due to its high cost, nor is it practical for the total fuel requirements of residents in these climates, with the possible exception of Florida. In Florida substantial bottle gas activities do exist. It is widely used there.

● **J. WOODWARD MARTIN, Lone Star Gas Co., Dallas, Texas, in a paper, "Bottle Gas Progress and Possibilities," presented before the Residential Gas Sales Conference of the Southern Gas Association at the annual convention held in Hot Springs, Ark., Feb. 12-15.—(Abstract by BUTANE-PROPANE News.)**

Butane delivered by truck and stored in so-called butane "systems" installed on the customers' premises constitutes the type of service most generally found in the South and Southwest today.

There have been developments in the last two or three years in the butane industry in the South and Southwest, particularly, that the gas industry as a whole might well be familiar with, for they are of concern to distributors everywhere.

In the first place, we have seen a mushroom growth in the number of butane gas system dealers throughout this entire area. We have seen men of various qualifications and experiences jump into this business over night—truck drivers, plumbers, coffee salesmen, battery men, hardware dealers, implement people and many others with questionable gas service experience, all seeming to view this business as a means of getting rich quick, and some have made modest fortunes. This condition has been

Forster Back Pack Outfit Serves Many Purposes

Developed for the control of forest fires through backfiring, the Forster Back Pack Outfit has found wide application in many other fields. State and municipal highway and street departments use them for weed burning along the right of way. Railroads, telephone and telegraph companies use them for weed burning, especially around wood poles.

Irrigation farmers use them for burning out irrigation ditches; poultry men use them for disinfecting brooders and chicken houses. With the addition of the Forster paint burning torch they are ideal for raising paint where large areas are concerned. They burn bottled gas and will not extinguish under any weather conditions.

★ *We are prepared to design and install industrial butane standby plants, public service gas plants, as well as automotive and stationary engine conversions. Your inquiries are solicited.*

RANSOME COMPANY

Manufacturers of Forster Torches and Burners

4030 HOLLIS STREET — EMERYVILLE, CALIF.

RANSOME

made possible principally due to the ease with which the sale of this equipment is financed through various federal financing agencies; such as, F.H.A.; F.S.A.; H.O.L.C. and others. To date the butane systems sold in the South and Southwest are of the underground or buried type because of their low initial cost. They are sold to the customer along with ranges, water heaters, refrigerators and heating appliances, and up to 90 per cent of their sales value underwritten by the federal agencies mentioned.

Something for the Builder?

Often the 10 per cent remaining is given to the builder, contractor or others interested as an incentive to get a particular butane system installed at the house under construction. Terms run as long as 20 years, as in the case of F. H. A. underwritten homes, even though the buried containers will last but a fraction of this time on an average. Under such conditions very little, if any, money is required to engage in the business which naturally opens wide the door for any one to take a try at it. Most frequently the dealer sells and delivers the butane as well as the systems and appliances, in which case a small amount of money is required for a tank truck or two to deliver the butane. These dealers usually employ salesmen on a straight commission basis which results in there being a large number of representatives of each trade-marked system — all of which has made for a tremendous activity in the butane gas system business and has excited a tremendous amount of interest on the part of the general public in butane gas beyond reach of natural gas and even in towns and cities supplied with natural gas. The mortality of salesmen and dealers themselves under these conditions has naturally been high. The accidents, as the result of the business being, to a very large degree, in the hands of such operators, is expected to be and is higher than would be the case if this business were carried on by trained service organizations primarily interested in the gas service and the profit to be earned from providing a dependable service over an extended time. Even under such conditions this business does not have a bad safety record but, on the contrary, its record is possibly as good as that of the manufactured and natural gas industries during their early stages throughout the United States.

Some Sacrifice Profits

It is common practice among some operators in the butane gas system business, especially in highly competitive territories, to sacrifice profit from the sale and handling of the butane, itself, in order to get the cost of operation to the customer down low, thereby assisting in increasing the sale of butane systems and appliances. In the summer time when the requirement for butane is very light, extremely low prices are quoted by some dealers in order to establish a low cost of operation and, at the same time, not incur much loss. In territories where such practices have been noted, just as soon as winter starts and requirements for butane in large quantities arise, the price is raised. In spite of such conditions within this

GREATER CUSTOMER USE OF

OVEN HEAT CONTROL

with the NEW MODEL B

ROBERTSHAW

STUDY THESE FURTHER IMPORTANT FEATURES

Dial combined with double safety plug-type cock, easy to service as an independent gas cock. ***(See A in illustration)***

Compact. Easily installed. 48 installation positions.

Bezel keyed to thermostat—rides free of manifold panel.

New, simplified front calibration, by-pass and pilot adjustment. Can be checked with absolute accuracy at room temperature.

Patented non-clog by-pass key. Accurate and dependable on all types of gas, including Butane-Propane. ***(See B in illustration)***

Oven valve and thermostat assembly form one unit removable from front without disturbing fittings. Cannot be replaced incorrectly.

Accurate and responsive. Minimum back lash. Co-axial seachenless eliminates lost motion.

Large gas capacity meets all CP requirements.

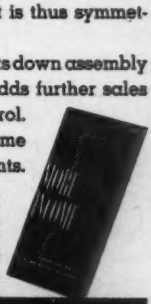
Patented electric-welded, stainless steel, solderless Diastat. Non-corrosive, over one million in use. ***(See C in illustration)***

Balanced Beauty Increases Sales Appeal

Gas cock and dial are combined in one unit, operated by one motion. Gas can't be turned on without setting thermostat, nor turned off without bringing it back to off-position. Every oven cooking operation *must* be done with controlled heat. The automatic advantages of the modern gas oven are automatically extended.

The dial is mounted directly on the range manifold, in line with the gas cocks. The front is thus symmetrical, more beautiful.

For the manufacturer this model cuts down assembly time and breakage. For dealers it adds further sales power to a nationally preferred control. For the service department it saves time and money by expediting adjustments.



This sales manual tells how to make MORE INCOME FROM GAS RANGES. Crowded with effective sales suggestions; 1939's most widely distributed range sales manual. Help your salesmen build business; *write for a copy.*

ROBERTSHAW THERMOSTAT COMPANY

YOUNGWOOD, PA.

industry, a tremendous acceptance on the part of the general public with respect to the purchasing of these gas systems and appliances has been witnessed in practically every state.

Lessons from the Cold Spell

The very cold spell that those of us in the South and Southwest have recently experienced and which represents the first since this underground butane system business has been in existence has clearly demonstrated to what extent this growth has amounted, as reflected by the shortage of transportation equipment to meet the demand, as well as the inadequacy of underground types of construction to take care of the customers' requirements in these areas during cold weather. As far south as central Texas, many customers had "no gas" for several days even though their underground systems were practically full. One expedient practiced by some dealers in order to carry their customers through this cold spell was to increase the propane content of the fuel up to 30 per cent and 40 per cent, thereby providing adequate pressure for a while, with the hopes that the weather would warm up before the propane played out. Often the butane systems were not suitable for such a product, either from the standpoint of designed working pressure of the container or from the standpoint of the setting of the relief valve. Naturally, as the weather warmed up this volatile fuel produced more pressure than that at which the relief valve may have been set which would cause it to "pop off."

Such experiences as were encountered during this cold weather may, in some areas, have the effect of retarding the acceptance of this type of gas service on the part of the public for a while, but it must be remembered that good will come from it because by such means do some people become educated in the business in which they are engaged. Likewise, we may expect more state laws to be passed regulating this business and where laws now exist, more enforcement—all of which will tend to make for more careful operation on the part of those now engaged in the business and who remain in it. Naturally, as long as a business can be as easily financed as the butane system business can, under existing methods, there will be a new crop of uninitiates getting into it as long as the public will put up with the service they provide.

"Flush-Production" Operation

The discussion of butane activities to this point has had to do with the flush-production, merchandising type of operators or those engaged in the business primarily to "skim the cream." Naturally these are the ones who are making the big show and who surround the properties of practically all companies represented here. This type of operator, under the conditions mentioned, constitutes a considerable number of those engaged in the butane business.

There are, however, conservative people in this business, viewed from a long range gas service standpoint, who quietly and without a lot of fanfare are developing their respective territories with the view to providing a gas service on a basis commensurate

The STAGGERED TOP

AN EXCLUSIVE FEATURE THAT RINGS YOUR CASH REGISTER

ROPER

RANGES FOR ALL GASES

Sensational New Feature

"PEASANT-WARE" BROILER with SERVE TRAY

A splendid innovation in a broiling service. Lets her serve foods piping hot at the table from the grill and serve tray. Easy to clean as a china plate.

In Roper you find exclusive features that sell because they offer a superior method of performance. The Staggered Top is one of these. It provides a full 41 inch cooking top. Plenty of room for 4 large utensils. No reaching over or around. The "Peasant-Ware" Broiler with Serve Tray is another.

Write today for 1940 Roper Catalog and promotional book. Cash in with Roper Ranges built for Butane, Propane and all other Gases.

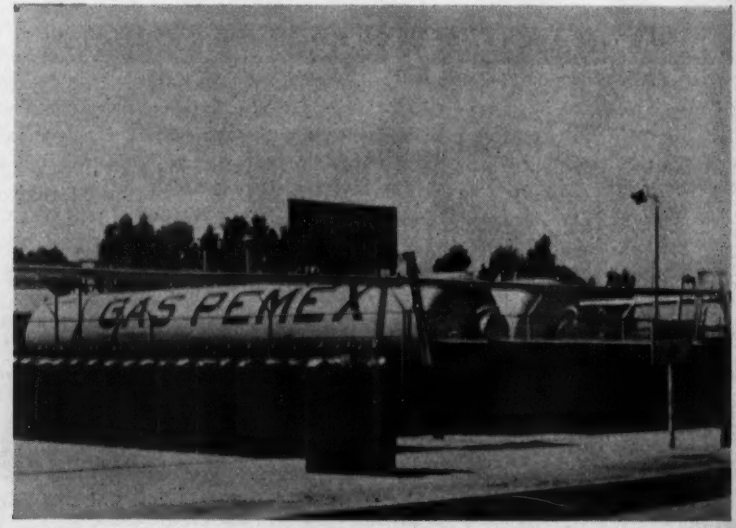
GEO. D. ROPER CORPORATION

General Sales Office and Plant: Rockford, Illinois

with that provided in a conventional way by gas utilities. Their operations involve investment of their own money in all equipment necessary to provide service to the customer's yard line, including the butane system. The responsibilities for performance, dependability of supply, uniformity of the product, safety and all other phases of ordinary gas service are quite naturally placed squarely on their shoulders, which condition will make for more acceptable service in the long run.

There are some butane dealers who have engaged in the merchandising type of business for some time who are changing over to a basis whereby they retain ownership of the systems which gives them more control over the sale of butane but which, at the same time, places on them more definite responsibilities. These more conservative operators will eventually win out in this business, the same as has been the history of other businesses. There is now underway more research work on the part of manufacturers of underground systems to develop aboveground systems to meet heavy demands and this recent cold weather will tend to accelerate this research work.

In summing up, it appears that the activities of those now engaged in the butane business are serving to educate a new market to the conveniences of gas as a fuel and that a sound service organization, intent on providing a dependable and safe butane service, may find fertile fields for its activities as a result—and therein lies possibilities for such organizations as the gas companies represented here.



Mexico City LPG plant of Petroleos Mexicanos

Give your business the "GO AHEAD" with Gas Refrigeration!

Servel Electrolux Runs on Bottled Gas and Tank Gas

Dealers throughout the liquefied petroleum gas industry are cashing in on the snowballing popularity of gas refrigeration to win new customers, increased load.

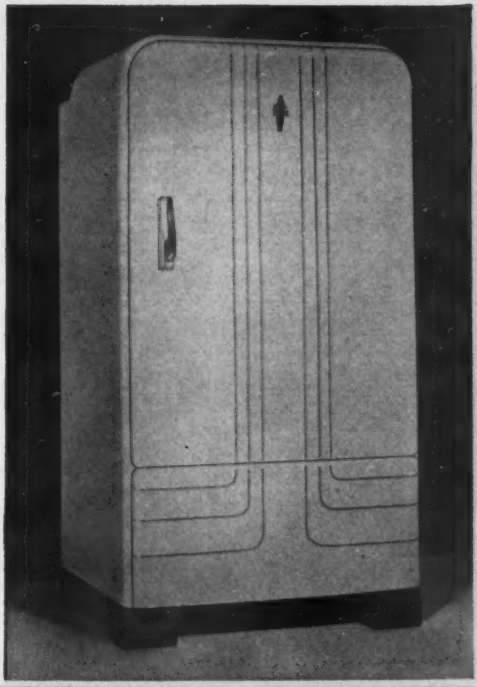
You can do the same . . . and at the same time win present customers to the use of other gas appliances. Take advantage of Servel's 1940 national advertising program. Start selling Servel Electrolux *now!*

Servel, Inc., Servel Electrolux Sales Div., Evansville, Ind.

GAS REFRIGERATION

- Publicizes the Modernity of Gas
- Protects Your Present Gas Load
- Stimulates Sale of Other Appliances
- Builds Load without Extra Investment

The SERVEL ELECTROLUX Gas Refrigerator



FREEZES SILENTLY . . . WITH NO MOVING PARTS

MOYNO

A Revolutionary New Pump for Butane and Propane

Robbins & Myers has designed the Moyno L.P.G. pump specifically to handle highly volatile liquids safely . . . efficiently . . . economically. One of the simplest pumping mechanisms ever developed. Check these nine "Moyno Exclusives" against any other pump in the world and you will realize why owners are so enthusiastic.

1. **NO VALVES.**
2. **NO VAPOR LOCKING.**
3. **SELF-PRIMING EVEN WITH HIGHLY VAPOR-DILUTED LIQUIDS.**
4. **LOW INTERNAL VELOCITIES, WITHOUT TURBULENCE OR CAVITATION.**
5. **POSITIVE DISPLACEMENT.**
6. **SMOOTH, UNIFORM FLOW. NO PULSATIONS.**
7. **UNEXCELLED SUCTION CHARACTERISTICS.**
8. **COMPACT DESIGN AND LIGHT WEIGHT.**
9. **SIMPLEST CONSTRUCTION, EASILY INSTALLED AND SERVICED.**

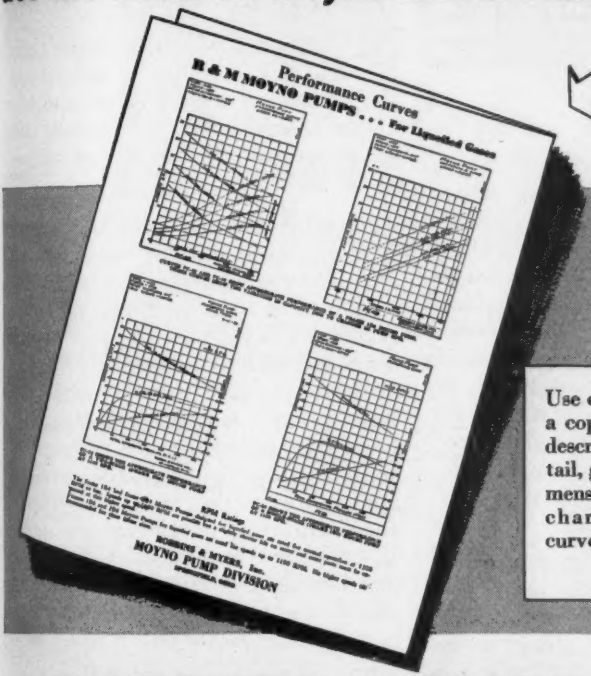
The Moyno L.P.G. pump is a pump especially designed for the L.P.G. industry. Clip the coupon on the opposite page and mail it AT ONCE. You will receive complete details by return mail.

Single stage Moyno L.P.G. unit for differential pressures not exceeding 75 P.S.I. Ideal for bulk stations.

2-stage unit for differential pressures ranging from 75 to 150 P.S.I. The pump for tank truck requirements.

L. P. G. PUMPS

Get the Facts on Moyno L. P. G. Pump Performance



Use coupon below to get a copy of this folder. It describes the pump in detail, gives ratings and dimensions, and contains charted performance curves for L.P.G. handling.

ROBBINS & MYERS, Inc.

MOYNO PUMP DIVISION

SPRINGFIELD, OHIO

ROBBINS & MYERS, Inc.
Moyno Pump Division, Dept. B
Springfield, Ohio

Please send details on

☐ Moyno single-stage bulk station pump.

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Don't Let Your B.t.u.'s Get Away

● **THE PRINCIPLES OF HEATING are included in a section on selling house heating service, published in the sales manual of the National Butane Gas Co., manufacturing jobbers of Memphis, Tenn., and used with the permission of that organization.—(Abstract by BUTANE-PROPANE *News*.)**

THE heating requirements of a home or building depend principally on three variables, of which one has been established by personal comfort, another by weather conditions and a third as a matter of individual preference. Greatest comfort seems to result with a house temperature of 70 degrees. The heating system or appliances installed to heat a home or room must be large enough to keep the home at the desired temperature, taking into consideration the minimum outside temperature.

Heat flows from a higher temperature level to a lower temperature level. A building that is warm must be continually losing or giving up its heat to the surrounding outside air, when the outside air is at a lower temperature than the air within the building.

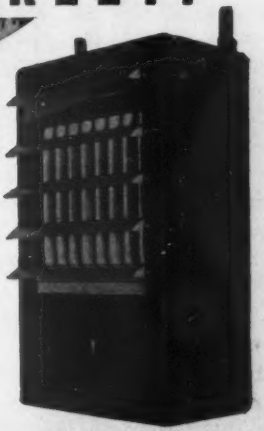
Any substance, whether it is air, water, wood, stone, glass, etc., placed between the two substances, retards this loss of heat. Each substance has a different rate at which the loss of heat is retarded, depending upon its physical characteristics. These materials offer resistance to the loss of heat in accumulative amounts, so that the total overall resistance to the loss of heat can be calculated from the individual sources.

There are heat losses other than through walls, ceilings or floors, and the greatest of these results from the cracks around doors or windows, and other openings. This loss is known as air infiltration.

To offset this loss from the warmer body (the interior of the building) a heating system or appliance is needed which is able to distribute sufficient heat to the various parts of the home or building to maintain the desired temperature inside, with the worst possible outside weather conditions. In estimating the size appliances for the temperatures, it must not be inferred that the heating appliances will work at full capacity or at all times, but assurance must be had that heating will be sufficient on the colder days or the ones requiring the most heat.

The advantages of direct, or space, heating with liquefied petroleum and other gases include three outstanding facts—cleanliness, comfort and convenience. They give off no odor, no smoke, no soot, and do not damage furnishings; they involve no wood or coal to carry in and no ashes to carry out; they effect a saving in costs of laundry, the life of curtains and draperies, and repapering and redec-

SELL L. P. G. HEAT TO MAIN STREET!



Walk out to your front door, and look around! Within a stone's throw are many good prospects for commercial or industrial heating with Bryant Unit Heaters.

Here's a number that really sells! It comes in four sizes, all ready to hang up and pipe to your L. P. G. tanks. It's reasonably priced—and there's a good profit in it for you. Best of all—it's so foolproof that you won't be troubled with service. Sell it, install it, and forget it!

Write us for full details on Bryant Unit Heaters, including the plan, "Selling Heat to Main Street."

Sell Bryant Unit Heaters, equipped for L. P. G. to stores, garages, restaurants, wherever people work or trade. Single (illustrated), double or triple units to take care of every heating problem, all with standard Bryant controls. You can make money selling Bryant Unit Heaters to Main Street.

THE BRYANT HEATER COMPANY

17825 St. Clair Avenue • Cleveland, O.

orating jobs; they bring economy in "firing up" and "cooling down" operations, and the one factor of increased safety from fire hazards when equipment is properly installed is of vital importance.

The fundamental principles of heat, its methods of transmission, the measurement of it in terms of heat units, and methods of estimating heat required and heat losses are given below under topic heads:

Definition of Heat. Heat has long been known as a form of energy. Modern theories as to the exact nature of heat conceive it to be a motion or agitation of molecules, or extremely small particles, of which every substance is composed. The intensity of the heat in a body is believed to be dependent upon the violence of this molecular disturbance. Every substance on the earth contains some heat and to say that a body is "cold" means simply that it contains a relatively small amount of molecular motion, or "heat."

Heat Transmission. Heat exhibits itself in four forms: Conducted, Radiant, Convected and Reflected heat. Conducted heat, for example, will pass from any body to a body of lower temperature which is brought into contact with it. A familiar example of this phenomenon is the flow of heat along an iron bar, the end of which is heated in a fire. The ability of different materials to conduct heat differs considerably. Metals are the best conductors of heat, while such materials as wood, felt, asbestos, etc., are very poor conductors, and, hence, are very good for insulation against conduction of heat.

Radiant Heat. Radiant heat is the kind that travels by invisible waves from a body. Radiant heat is supposed to be a motion or vibration of the ether which is believed to pervade all space. It follows the same physical laws as radiant light, being radiated like light, in straight lines.

Convected Heat. When a particle of air comes in contact with a warm object, such as a warm furnace surface, this surface or object transmits heat to the air. Such heat is called convected heat.

Sensible Heat. Heat that goes to change the temperature of a substance without a change in state is called sensible heat.

Latent Heat. Heat that goes to change the state of a substance without a change in temperature is called latent heat. The heat required to change a substance from a solid to a liquid is called latent heat of fusion and heat required to change a substance from a liquid to a vapor is called latent heat of evaporation. The latent heat of evaporation of water is 970.4 B.t.u.

Specific Heat. The amount of heat expressed in B.t.u. required to change the temperature of one pound of any substance one degree F., or the ratio of the heat capacity of any substance to that of water.

Measurement of Heat. In measuring heat, there are two quantities to consider, the intensity of heat, and the amount of heat. A small piece of hot metal may not contain as great an amount of heat as a pail of lukewarm water, but the intensity of the heat in the former is much greater.

NO MATTER WHAT THE PROBLEM

Sales methods, marketing information, construction of plant facilities, are available to domestic suppliers who are customers of Shell.

Shell engineers are thoroughly experienced in all industrial heating application such as heat-treating and high temperature work. They are prepared to help you in design of new equipment, development of new processes.

Experience in every use is at your command when you specify Shell Liquefied Petroleum Gas

THROUGH years of experience, Shell has accumulated a wide variety of information on the uses of liquefied petroleum gas.

The breadth of this experience assures you of competent advice on such diversified subjects as equipment design, application methods, storage and handling methods, construction of facilities, and marketing information for domestic suppliers.

The length of this experience assures you of the soundness of the service offered you by the Shell engineering staff.

Shell's experience, Shell's technical service are as near to you as your phone. Simply call the nearest Shell office.

Shell engineers have helped develop processes for the use of liquefied petroleum gas in such widely varied services as gas enrichment, internal-combustion engine fuel, hotel kitchen and dining car fuel, etc.

SHELL LIQUEFIED PETROLEUM GAS

Offices of SHELL OIL COMPANY, INCORPORATED • ST. LOUIS • SAN FRANCISCO • NEW YORK
INDIANAPOLIS • CHICAGO • MINNEAPOLIS • JACKSONVILLE • DETROIT • NEW ORLEANS • CLEVELAND

The intensity of heat is denoted by the word temperature. Heat must be measured by the effect which is produced on some substance.

The Unit of Heat (B.t.u.). The unit of heat used in mechanical engineering is the heat required to raise the temperature of a pound of water 1 degree F. This is called the British thermal unit and is denoted B.t.u. As this quantity is not exactly the same at all temperatures it is necessary to specify further a definite temperature at which the unit is to be established. The practice of different authorities varies in this regard but the mean B.t.u. has been practically established.

This is defined as the one hundred-eightieth part of the heat necessary to raise the temperature of one pound of water from 32° to 212° F., at 14.7 lb. per sq. in. pressure (absolute).

The Therm. This unit is a convenient multiple of the British thermal unit, to-wit, 100,000 B.t.u.

Hourly B.t.u. Heat Loss. By heat-loss is meant the amount of heat transmitted through the walls and through window glass of each room in a home or building, and the heat required to raise the temperature of outside air coming into the rooms (infiltration) through window cracks and doors frequently opened, to room temperature. In other words, the total heat required to maintain a predetermined room temperature must be calculated for each room. A fairly accurate estimate of the hourly B.t.u. loss may be made from the following method of heat measurement:

Find the square feet of glass in the room and multiply by 70.

Find the square feet of exposed wall and multiply by 20.

Find the square feet of the floor and ceiling and multiply by 20.

Take the cubic feet of air and multiply by 2.

For example, take a room 14 ft. x 16 ft., with an 8 ft. ceiling, with two exposed walls; north wall having two 2 ft. x 5 ft. windows, west wall having three 2 ft. x 5 ft. windows.

1. Each window contains 10 sq. ft. of glass, the five windows having a total of 50 sq. ft. Multiply this by 70 = 3500 ft. of heat loss due to glass.

2. The north wall is 14 ft. x 8 ft. = 112. Multiply 112 by 20 = 2240 ft. of heat loss.

3. West wall is 16 ft. x 8 ft. ceiling = 128 ft. Multiply 128 by 20 = 2560 ft. heat loss.

4. Single floor, 14 ft. x 16 ft. = 224 sq. ft. Multiply 224 by 20 = 4480 ft. heat loss. Double floor, 14 ft. x 16 ft. = 224 sq. ft. Multiply 224 by 10 = 2240 ft. heat loss.

The cubic air space in this room, 14 ft. x 16 ft. x 8 ft., is 1792 cu. ft. Multiply 1792 cu. ft. by 2 = 3784 ft. heat loss.

Now add 3500 glass space loss; 2240 north wall heat loss; 2560 west wall heat loss; 4480 floor ceiling heat loss (single floor) and 3784 air heat loss and it gives 16,564, the capacity of heater needed.

The proper heater for this room would be one with 22,000 B.t.u. input, as most heaters are only 70% efficient.

Scientific estimates of heat losses are essential to successful selling.

Increase Your Profits with This Ideal Load Builder

Assure yourself of added income by recommending Blodgett Ovens. They consume much more gas than the ordinary kitchen range, yet are just as easy to sell. Famous for nearly 100 years, they are noted for their quality.

Every restaurant, hotel, cafeteria, bakery is a definite prospect. When ordering, please specify the B.t.u. content of the gas, its specific gravity and pressure at the appliance.

THE G. S. BLODGETT COMPANY, INC.
53 Maple St. - Burlington, Vt.

BLODGETT OVENS

PRODUCTS

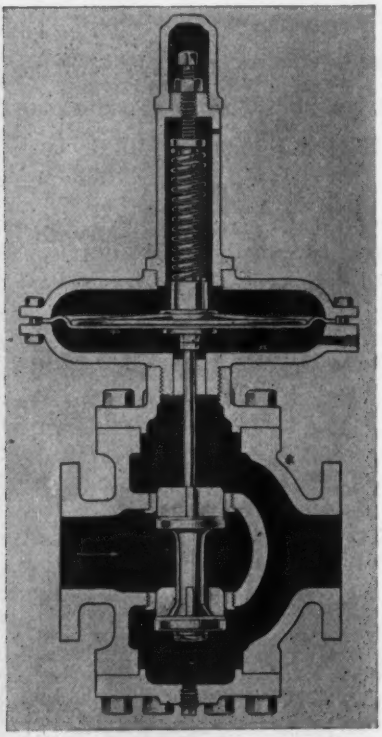
Reducing Valves

Fisher Governor Co., Marshalltown, Iowa
Model: 217AS and 217AL.

Description: These reducing valves are designed for receiving a varying or high pressure at the inlet side and automatically delivering a constant reduced pressure to the outlet system. They are suitable for installation on steam, air or gas lines.

Type 217AS is spring actuated, while Type 217AL is designed for lever and weight operations. Both valves have full capacity bodies fitted with double discs, ground bevel seats, and balanced inner valves which are not affected by fluctuating pressures. Valve bodies can be easily inverted in order to convert the reducing valves into relief valves.

Eleven different sizes of sensitive multiple corded diaphragms are available to meet specific pressure requirements for air, steam, gas and other fluids.



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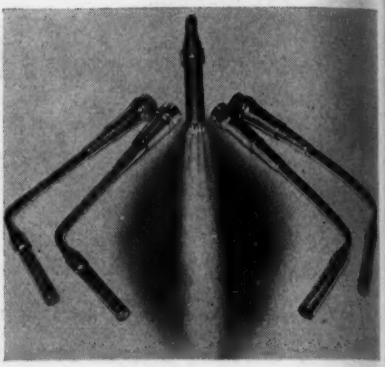
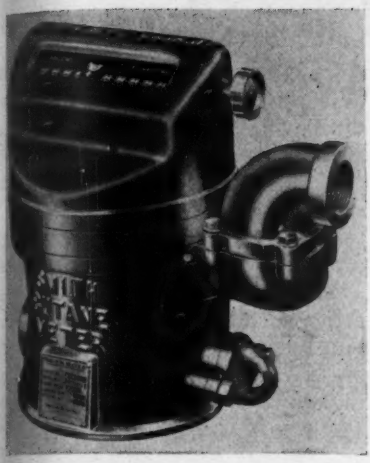


Rego Multiple Tips

The Bastian-Blessing Co., 242 E. Ontario St., Chicago, Ill.

Description: This group of tips, designated as Rego GXH series, is available in four different sizes, GXH72, 68, 60 and 56. Manufacturer states that they offer these distinct advantages: (1) Multiple-hole tip construction permits high heat output yet produces a soft, brush-like flame that eliminates turbulence in the weld puddle, thereby preventing detrimental pin-holes in the applied hard-surfacing material after it has cooled. (2) The wide flame produced makes it easier for the operator to keep the weld zone and the rod in a protective carbonizing flame envelope, thus eliminating harmful oxidation. (3) Individual mixer in each tip assures correct gas mixing and economical operation. (4) Low equipment cost because GXH tips are designed for use with standard Rego GX or SX welding torch handles.



Butane Meter

Smith Meter Co., Los Angeles, Calif., Milwaukee, Wis., Dallas, Texas.

Model: BU-40.

Description: The Smith butane meter is specially designed and manufactured for butane and propane service and conforms to butane code requirements. Built to withstand 250 lbs. working pressure. It is of corrosive resistant construction. Incorporates the patented Smith rotary principle, which eliminates all valves and rubbing parts. Equipped with horizontal counter and built-in strainer. Meter can be furnished with either a 6-in. or 10-in. vertical dial, and can be had with a receipt printer to show customer exact number of gallons delivered.

◆ ◆

Control

Milwaukee Gas Specialty Co., Milwaukee, Wis.

Model: Basoid.

Description: The Basoid is a compact, sturdy, control, combining in one unit the Baso valve and the MGSCo. solenoid valve. The unit automatically controls gas flow to the appliance and provides complete shut-off in the event of pilot flame failure, utilizing a single valve model for all fuel gases. Solenoid valve special design feature provides continuous quiet operation. The Basoid is adaptable for use in controlling gas to circulating heaters, gas fired steam radiators, boilers, floor furnaces, and central heating furnaces. Models are available in ¾ in. and 1 in. valve sizes for any of the usual frequencies and voltages.

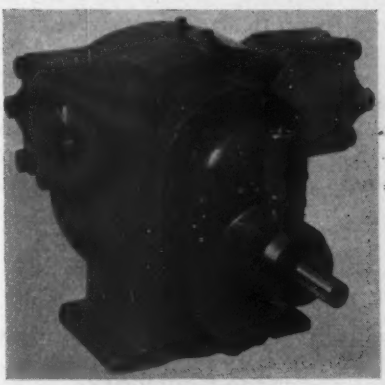
◆ ◆

Butane Pump

Smith Precision Products Co., South Pasadena, Calif.

Model: 300 Smith Butane Pump.

Description: High volumetric efficiency, elimination of destructive bearing loads and the provision of a packing box permanently sealed against escaping gas are the leading features of this pump. It is of multiple gear type in which each gear is provided with double inlet and outlet ports, diametrically opposed, which balances shaft bearing loads. Reduction gears in the pump housing provide direct motor drive. The integral



reduction gear case is filled with a viscous lubrication fluid, insoluble in butane. The fluid is retained by the packing box and prevents all possible escape of butane vapors. The pump is capable of tank filling without vapor return lines. Capacities are 30 to 80 g.p.m., built for 250-lb. working pressure.

KEEPING PACE WITH PROGRESS

Ever alert and responsive to quick-changing conditions, Philgas prides itself in not only keeping pace with progress but in keeping well ahead. In engineering, research, equipment, appliances and merchandising methods new ideas are constantly being developed and put into execution. Many practices in the industry today, can trace their beginning to Philgas—the leader and pioneer! It will be well worth your while to consult with Philgas regarding your needs for Butane or Propane.

Philgas
DEPARTMENT
PHILLIPS PETROLEUM COMPANY
GENERAL MOTORS BUILDING
DETROIT, MICHIGAN

NEW YORK
PHILADELPHIA
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MILWAUKEE
ST. LOUIS
AMARILLO
BARTLESVILLE, OKLA.

THE NATION'S LARGEST MARKETER OF LIQUEFIED PETROLEUM GASES

PRODUCTION IS UP

WHILE the refineries throughout the country last year were producing liquefied petroleum gas to an amount believed to considerably exceed 250,000,000 gals., California was contributing 63,012,000 gals. to the grand total, according to the records of California Bureau of Mines.

With but 12 producing companies active in all but three months, production increased steadily, except for one month, throughout the year, going from 4,318,000 gals. in Jan., 1939, to 6,944,000 gals, in December. Month-end stocks fluctuated but little, month to month, although the year ended with less on hand than there was the first month.

While considerably more time will be required to complete the Government's compilation of production, that of California, month by month, in Table No. 1:

TABLE NO. 1—1939 PRODUCTION OF LPG IN CALIFORNIA

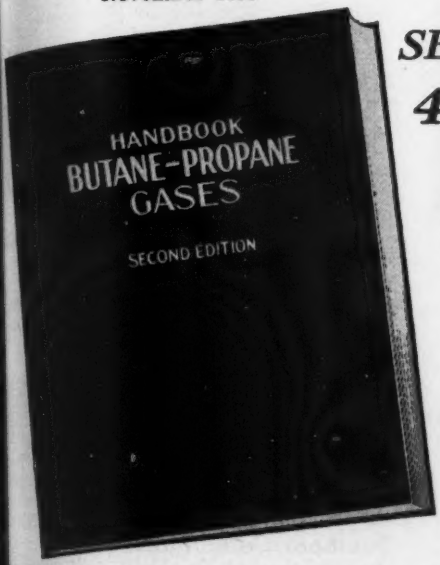
(Calif. Bureau of Mines)

1939	*Production Gals.*	*Stock, End of Mo.-Gals.*
Jan.	4,318,000	1,734,000
Feb.	3,947,000	1,547,000
Mar.	4,760,000	1,663,000
Apr.	4,779,000	1,734,000
May	4,871,000	1,577,000
June	5,106,000	1,683,000
July	5,212,000	1,810,000
Aug.	5,194,000	1,709,000
Sept.	5,270,000	1,815,000
Oct.	5,898,000	1,631,000
Nov.	6,713,000	1,788,000
Dec.	6,944,000	1,690,000
	63,012,000	

Handbook

BUTANE-PROPANE GASES

Latest Revision
November 1938



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CONTENTS: Semi-Bulk Distribution: Use of Butane in Buses: Combination Propane Operated Utility Plant: Use in Internal Combustion Engines: Design & Installation of Storage: Supply from Petroleum Refineries: Engineering Data on the Lower Olefins: Domestic Appliance Testing and Utilization: Economical Comparisons with Coal, Oil, Electricity, Producer Gas, Manufactured Gas: Town Plants: Manufacture from Natural Gas: Special Uses: Volume Correction Factors: Transportation: Use with Other Gases: Analysis & Testing: Properties of Mixtures: Bottled Gas Distribution: Bibliography: Central Plant Directory: Catalog Section.

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BUTANE-PROPANE News

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FOUNDED SCAIFE 1802

QUALITY CYLINDERS

PROTECT YOUR

BOTTLED GAS PROFITS

You need the *best* cylinders for *your* bottled gas—cylinders made of the best materials—built by experts using modern equipment and methods. SCAIFE offers you all these—plus a reputation for quality that has persisted since 1802!

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Representatives in Principal Cities

New Research Director for Robertshaw Thermostat Co.

S. G. Eskin has been appointed director of the Robertshaw Research Laboratory in Pittsburgh, it was announced recently by the Robertshaw Thermostat Co., Youngwood, Pa.

Mr. Eskin was formerly chief engineer of the American Thermometer Co., St. Louis, and prior to his recent appointment was research engineer of the Edison Electric Appliance Co., Chicago. He holds a B. S. degree from the Massachusetts Institute of Technology and an M.S. degree from Northwestern University.

◆ ◆

George S. Jones, Jr., Says "Sales Pay the Fiddler"

George S. Jones, Jr., vice-president and general sales manager of Servel, Inc., spoke on the technical phases of selling under the title of "Sales Pay the Fiddler," at the annual convention of the Indiana Manufacturers of Dairy Products, which was held at the Hotel McCurdy in Evansville, Ind., Jan. 15 to 18.

Mr. Jones also spoke before the Trade dinner of the Spring Market Week held by the Western Furniture Exchange and Merchandising Mart in San Francisco, Calif., on the evening of Feb. 7 on how those in the appliance business might do a better merchandising job in 1940.

◆ ◆

Southern California Meter Association Holds Hi-Jinks

The Southern California Meter Association broke away from its staid and often technical path on Feb. 24 when it relaxed long enough to put on its thirteenth annual hi-jinks. It was held in the Riverside Breakfast Club pavilion and grounds in Los Angeles.

"Food, sociability and entertainment" were modestly promised by James Dunn, chairman of the entertainment committee, and underwritten by George H. Forster, Jr., president of the Association, and every promise was generously fulfilled.

Liquefied Gas Bulletin Published by C. N. G. A.

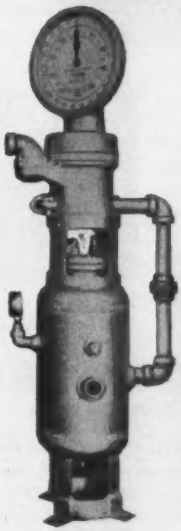
After nearly three years of intensive committee work, the Liquefied Petroleum Gas Committee of the California Natural Gasoline Association, under chairmanship of John S. Gallagher of the Texas Company, has completed its work on and published the Association's new bulletin, TS-392, "Tentative Specifications and Tentative Standard Methods of Test for Liquefied Petroleum Gases." (Photo P. 44)

The bulletin's purpose is to present tentative standard specifications for the purchase and sale of liquefied petroleum gas mixtures varying from commercial butanes through mixtures of butanes and propane to commercial propane. It sets up six standard grades of liquefied petroleum gases in this range and presents tentative standard methods of test, setting forth procedures by which compliance with the specifications may be established.

In the opinion of the Committee, there is an evident need for the standards set up in this bulletin and their acceptance by the industry would help simplify the relations between manufacturer, distributor, equipment designer and consumer.

The content of the bulletin includes specifications for the six C. N. G. A. standard grades; description and definition of a liquefied petroleum gas; general requirements; methods of test; standard methods for determination of end point characteristics, vapor pressure, specific gravity by pycnometer and specific gravity by hydrometer. The bulletin is complete with an appendix giving tables of multipliers to convert volume at any temperature to volume at 60° F.; physical characteristics of lighter hydrocarbons; relations between the six C. N. G. A. standards and requirements of various regulatory bodies as to minimum design pressure of containers; and a vapor pressure conversion chart for liquefied petroleum gas.

The new bulletin is now ready for distribution and copies may be obtained by addressing George L. Tyler, secretary, California Natural Gasoline Association, 710 West Sixth Street, Los Angeles. The price is $1 to Association members and $1.50 to non-members.



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Combines in one unit all equipment essential to accurate measuring of Butane, Propane and other liquid gases at loading station.

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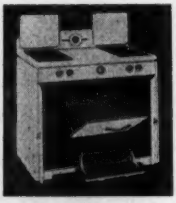
FACTORY BUILT FOR ALL TYPES OF GAS

THE distinctive beauty of this new range gives it visual selling power that's hard to equal. But nothing has been sacrificed to gain this beauty, for the *Oneida* is just as efficient and practical as all other units in this famous line. And Round Oak ranges *never* require unhandy adjustments, because they are FACTORY BUILT and tested for the bottled gas you specify. Use the coupon below and get all the facts today!



Open view of Oneida showing new design.

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Cooperative Research Sponsored by N. G. A. A.

A study of present apparatus and procedure used in the making of low temperature fractional analyses of both gases and liquids is being sponsored by the Natural Gasoline Association of America, according to George P. Bunn, Phillips Petroleum Co., president of the Association.

The study will take the form of a cooperative project in which both member and non-member companies will take part. Fifteen individual company laboratories will alternate in furnishing all the other laboratories with identical samples of the material to be analyzed and the resulting analytical data will be compiled and studied by the Technical Committee of the Association under the direction of C. R. Williams, Continental Oil Co., Ponca City, Okla.

The Association is attempting to determine the possible sources of error so that more accurate results may be obtained.

One source of difference is being eliminated at the start through the adoption of a standard table of physical constants to be used by all participating laboratories in making the analytical calculations in the test series. Identical sample containers are being furnished by the Association and a standard sampling procedure has been established. The project will probably extend over a considerable period, the first phase being concerned with natural gases and the second with the study of liquids in the natural gasoline range.

◆ ◆

Virgil Long has applied to the Kearney, Neb., council for a permit to install a 1000-gal. butane gas plant for a service station on the highway within the city limits.

•

Eveready Gas Equipment Co., of Little Rock, Ark., and Dallas, Texas, announces that the Eveready Butane Gas System is now being manufactured at Dallas and Houston, Texas, in addition to Little Rock, resulting in faster deliveries.

W. A. BADEN

PAUL R. SMITH

W. A. Baden Made Vice President Of Anchor Petroleum Co.

W. A. Baden, butane sales manager of the Warren Petroleum Corp., Tulsa, Okla., and Paul R. Smith, attorney for the same company, have resigned to join the Anchor Petroleum Co., also of Tulsa. They assumed their new duties Feb. 1, Mr. Baden as vice president, and Mr. Smith as secretary-treasurer. Both are also directors of the organization.

The company will produce and market butane and propane for domestic and industrial purposes. These products will be transported in tank car and tank truck lots. Engineering services will be provided for the conversion of industrial and domestic equipment to the use of butane and propane gases.

Mr. Baden is widely known in the industry, having been for the past several years an active member of the national Liquefied Petroleum Gas Association. He has written many LPG papers.

P. J. Hoagland and Fred J. La Fortune are now connected with the butane department of Warren Petroleum Corp.

◆ ◆

Harrison, Ark., Dealer Is Constructing New Building

C. N. Kent, who has operated the Butane Gas Co., in Harrison, Ark., for some time, has constructed a new stone building along the railroad tracks for his office and plant.

The structure will be two stories high and has ample space adjoining for a bulk plant and automobile parking facilities.

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Type 721

BOTTLED GAS REGULATOR

The Regulator with the fastest growing popularity

ALTHOUGH this FISHER Type 721 Bottled Gas Regulator is extremely compact and of medium size, **it actually has a capacity equal to or greater than most regulators of much larger and heavier design.** This important feature is made possible by FISHER'S superior research and engineering facilities.

Capacities range up to almost 100 cubic feet of gas per hour even when the cylinder or tank pressure is down to 10 lbs. Much greater capacities available on higher pressures. Sensitive control guaranteed under all these flows. Listed as standard by Underwriters' Laboratories. Approved by most major liquefied petroleum gas distributors—proved by three years' service on thousands of installations. Economical. Highest quality workmanship and materials. Thoroughly tested before shipment.

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RESEARCH

● **BUTANE-PROPANE News wishes to keep its readers informed regarding technical and practical advances concerning research, manufacture, development, and transportation in the liquefied petroleum gas field. In this column will be found a resume of recently published articles, papers, bulletins and books dealing with the industry's various phases.**

Engineering Chemistry—by Thomas B. Stillman. Sixth edition; 1093 pages; cloth; price, $12.50. The Chemical Publishing Co., Easton, Pa. A manual for physical testing and quantitative chemical analysis for use of students, chemists and engineers. It is in effect a manual of testing of engineering materials to determine their use or lack of availability in industry. To this end actual chemical analyses must be supplemented by physical tests and microscopic examination. In this volume all these methods have been described. For assistance in interpretation, specifications in full are added and supplemented with suggested forms of report together with some discussion of the place of such materials in industry. Of special interest to the gas industry are nearly 100 pages devoted to gas analyses, including the classification of gases with determinations ordinarily required; summary of qualitative and quantitative tests of numerous gases, sampling of gases; specific gravity of gases; gas calorimetry and calorimeters.

Portable Container Protects Pressure Gage from Injury—*Oil Weekly*, Jan. 22, 1940, p. 15. One company operating in one of the Southern California oil fields, realizing the large amount of money that is usually lost per year through rough handling of gages, constructed light galvanized sheet metal containers in which the gages for each well can be permanently kept, yet easily moved if necessary. Illustrated.

High-Pressure Vapor-Liquid Equilibrium for the Systems Propylene-Isobutane and Propane-Hydrogen Sulfide—E. R. Gilliland and H. W. Scheeline. *Industrial and Engineernig Chemistry*, Jan. 1940, pp. 48-54. By means of an apparatus and experimental technique described in a previous article (*Industrial and Engineering Chemistry*, Aug., 1939, p. 1050), P-T-x-y data have been obtained on the propylene-isobutane and hydrogen sulfide-propane systems.

Phase Equilibria in Hydrocarbon Systems—C. N. Nysewander, B. H. Sage and W. N. Lacey. *Industrial and Engineering Chemistry*, Jan. 1940, pp. 118-123. The volumetric and phase behavior of six mixtures of propane and *n*-butane have been investigated throughout the two-phase region at temperatures above 160° F. From these data the specific volumes and the compositions of coexisting phases of the propane-*n*-butane system have been calculated. The experimental results are presented in tabular and graphical form.

The Proceedings of the Fourth Annual Forum of the Porcelain Enamel Institute have just come from the press. This book contains all the papers delivered at the meetings held at Ohio State University in October. It also gives a verbatim report of the discussions which followed each paper.

Subject matter in the book includes the most recent technical improvement in the enameling process; fine grinding; cast iron enameling by the dry process method; the work being done at the United States Bureau of Standards; and drawing compounds and the use of softened water in cleaning and pickling process. Copies, $2 each, may be obtained from the Porcelain Enamel Institute, 612 North Michigan Avenue, Chicago, Ill.

Fractionating Equipment for Obtaining Special Products in Natural Gasoline Plants—H. C. Givens. *Petroleum Engineer*, Nov. 1939, pp. 51, 52, 54. Reflux condenser mounted on column is favored. When special products are to be manufactured less space between trays is suggested.

Propane-Butane—*Oil and Gas Journal*, 1939, Vol. 38, No. 6, pp. 52-53, 66, 69-74. Five flow sheets for units of different capacities are compared. Normal butane is the most valuable saturated feed stock, followed by iso-butane and propane. Ethane is valueless. Necessary shutdown and maintenance work are discussed. Economic conditions and operating methods are reviewed for two plants. Suggested designs are given for thermal polymerization units for natural gasoline plants of various sizes, and the economics of each unit are reviewed.

Predicting Wet Gas Recovery in Recycling Operations—Judson S. Swearington. *Oil Weekly*, Dec. 25, 1939, pp. 30, 32, 33, 36, 38. The discovery in recent years of a number of fields that yield a new type of petroleum production, known to the industry as condensate or distillate, has created new operating problems. This article presents principles that should influence the selection of well locations and the plan for future operation in an important way if maximum recovery of liquid is to be realized.

Alignment Chart for Estimating the Mean Effective Pressure and Piston Speed of an Engine—Frank E. Hangs. *Petroleum Engineer*, Dec. 1939, p. 94.

Volumetric and Phase Behavior of Hydrocarbons—B. H. Sage and W. N. Lacey. Published by the *Stanford University Press*, Stanford University, Calif., 1939. The phenomena discussed in this study are of great industrial importance in the processes of petroleum and natural gas production and transportation, of natural gasoline manufacture, and of certain parts of petroleum refining. Throughout the operation of these industries volumetric and phase changes occur. The intelligent control of these operations depends upon a thorough knowledge of the principles discussed in this book.

Butane and Isobutane — Oel, Kohle, Erdoel, Teer, Vol. 14, 1938, pp. 998-1011. This article describes apparatus and two procedures with diagrams for the quantitative analysis of hydrocarbon mixtures by low temperature distillation, absorption, or hydrogenation.

Canadian Refrigeration Code — The Canadian Engineering Standards Association has adopted a revised Standard Code for Mechanical Refrigeration. This code is very similar to that recently adopted by the American Standards Association. Copies may be obtained from the Canadian Engineering Standards Association, Ottawa, Canada, for 50 cents per copy.

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THE CROWN OF SAFETY ON ALL PROPANE-BUTANE CYLINDERS
●Specially designed for the safe control of Propane-Butane gases, Kerotest Cylinder Valves are recognized as the safest valves made. Genuine diaphragm packless design gives it long life . . . automatic, spring relief provides sure release of excess pressures.
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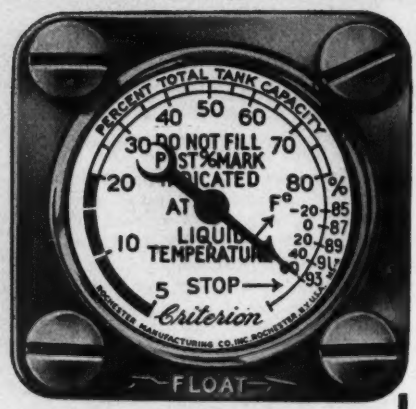

For SAFETY'S SAKE Specify

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CRITERION GAUGES

Rochester Criterion Gauges are designed specifically for liquefied petroleum fuels. Permanent magnet pointer control—no packing glands.

- **No opening through Gauge head into tank.**
- **No wastage of fuel when in use.**
- **No keys or wrench required when reading.**
- **LOOK AT DIAL and know instantly the ACTUAL PERCENTAGE of TOTAL CAPACITY you really have in the system.**
- **RED PORTION at left hand of scale WARNS USER when fuel needs replenishing.**

ROCHESTER GAUGES are distributed through Manufacturers of L. P. G. Systems. Guaranteed and backed by the experience gained in manufacturing upwards of fifteen million. Listed as standard by the Underwriters' Laboratories.

Specify Rochester Criterion Gauges on YOUR Butane Systems

ROCHESTER MFG. CO., INC.
17 ROCKWOOD ST. • ROCHESTER, N. Y.

ROCHESTER
Criterion
GAUGES

"SALES-A-POPPIN" IN N. Y.

"HELLZAPOPPIN" on the New York stage is still packing them in and incidentally making plenty of potatoes for Olsen and Johnson. So maybe it is just coincidence and maybe it isn't that the newest sales contest of the Atlantic States Gas Co. has been named "Sales-a-poppin."

Whether the similarity is real or only fancied, there is plenty of theatrical promotion being introduced into the four months' drive that runs from January until the end of April. The total prize money for the salesmen to shoot at comes to $1500, with prizes distributed each month in several brackets and a grand prize for the end of April.

The monthly bracket prizes are for sales of Tappan ranges, Ruud water heaters, Electrolux refrigerators, total volume of sales for the period, and estimated gas load added.

In addition to the competitive prizes, which can be awarded to as high as 15 men in each area every month, every man who makes his quota for the month receives a nominal prize. This backs up the effective contest slogan, 'Everybody Wins.'

At the beginning of the contest in January each man received a copy of the rules, with a personal letter from President George A. Burrell, encouraging him to do-or-die for Atlantic—and the prize money.

Mailing pieces are sent to the homes of salesmen every ten days, so Mrs. Salesman can do a little private needling if her spouse seems to be lagging in his efforts. One of these is an early morning self-starter which

he is urged to read over his breakfast coffee. It is called, "My Sales Plan," and is as follows:

I am going to look and feel successful.

I am going to tackle the tough assignments first.

I am going to set my own sales quota.

I am going to keep cheerful.

If I make a good deal I am going to ask myself how I did it, and if I fail on a sale I am going to ask myself the same thing.

I have the best product I ever handled and the best bargain ever offered in this community, and this I will always keep in mind when approaching a prospect.

I will also remember that 11,000 satisfied customers use my products and that a sound and substantial company is behind me.

I will constantly call on my old customers and retain their good will and help.

I will do a certain amount of canvassing of new prospects each week and thus constantly add new friends and prospects to my present ones.

I will plan each day's campaign, and visualize my prospects; their types, their income, what they can afford, and how to approach and talk to them.

This is the third sales contest of this general nature that Atlantic States has embarked upon. All have been highly successful for company and salesmen, according to Col. Burrell.

◆ ◆

The Sacramento, Calif., city council has under advisement a proposal to convert Broadway, west of Fifth St., into a heavy industrial zone so that the application of **Lee Barmby** for permission to install a butane service station at Broadway and Fifth may be acted upon favorably. This rezoning matter has been under consideration for some months, as also have other applications for butane filling stations and bulk plants.

HOW MUCH DO YOU LOSE ON LITTLE JOBS?

It's pretty easy to slip-up on little pumping jobs... easy to lose both time and money.

With this in mind, Viking built a Hand Driven Pump for small Butane and Propane orders. It's trigger-quick on delivery—a whirlwind on economy. Bearing and packed stuffing box are extra long.. pump constructed with opposite ports.

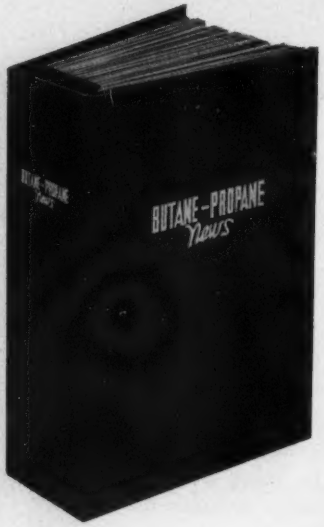
Bulletin 2301-40 will fix you up with complete specifications. Write.

VIKING
PUMP COMPANY
CEDAR FALLS, IOWA

BUTANE-PROPANE *News*

BINDERS

A Click and Magazines are Bound



TO OUR many thousands of subscribers who have wished for an inexpensive way of binding and preserving their copies of BUTANE-PROPANE *News* we offer the new and beautiful PERMO BINDER to fill this very definite need. This binder is simple to use. *No punching or marring of magazines necessary.* A click and the magazine is in... and with a patented construction any issue can be quickly and easily removed without disturbing the other magazines in the binder. One binder holds 12 issues.

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Send check for $1.50 for each binder desired, $1.75 foreign.

BUTANE-PROPANE *News*

1709 West Eighth Street Los Angeles, California

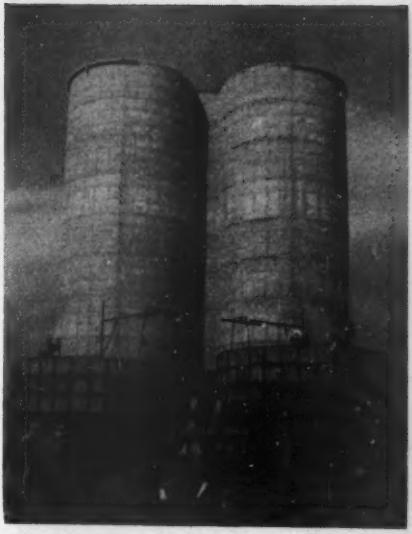
American Gas Co. Moves Bulk Plant to Cassopolis, Mich.

The American Gas Co., which was formerly located in Benton Harbor, Mich., has established its bulk plant in Cassopolis, Mich.

The new building for the plant is 140 ft. long and the office is 30 x 30 ft. in size. The plant is located on East State St., along the tracks of the Grand Trunk railroad. Between 25 and 40 people will be employed by the company when fully established in Cassopolis, it is stated.

◆ ◆

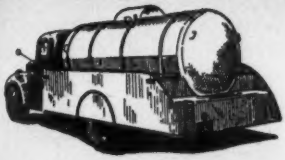
Correction. In the "Products" department of the February issue of BUTANE-PROPANE *News* it was stated that the average fuel cost of operating the Ohio Foundry and Manufacturing Co. cabinet heater was but one cent per day. This was our error, the manufacturer informs us, for one cent per day is the approximate cost of operating the fan, alone, not the heater.—EDITOR.



Concrete tempering and storage bins for rice, Butte County, Calif.

THE BUTANE INDUSTRY LOOKS TO THE LEADER *for*

• Underground Tanks • Bulk Storage Tanks • Truck Tanks



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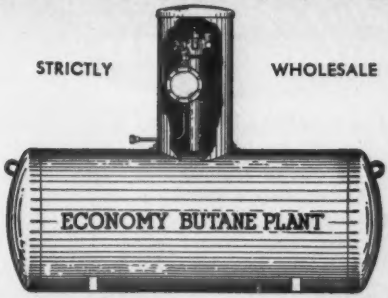
ECONOMY BUTANE AND PROPANE SYSTEMS, STORAGE TANKS AND TRUCK TANKS are built in strict accordance with A.S.M.E. code. All domestic systems bear the Underwriters' Laboratories label. Our tanks are designed and supervised by men who have had over 20 years' experience in construction of containers for high grade pressure fuels.

STRICTLY WHOLESALE



We are also prepared to furnish PROPANE SYSTEMS for domestic use. Exclusive dealership available.

Write, Phone or Wire for Complete Information!

DALLAS TANK & WELDING CO., INC.

"Tanks by Banks"

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LIQUID BUTANE HAND PUMP

Positive displacement oscillating vane type.
Capacity 12 gals. per minute.
No. 755.
Size No. 3.
1¼-in. Pipe Inlet and Outlet.

OUTSTANDING FEATURES

1. Through bolted for greater strength.
2. Ground and polished shaft.
3. Faced flange connections with recessed Neoprene gaskets.
4. Special Butane resistant packing with locknut on packing gland.
5. Malleable iron handle.
6. High strength Meehanite body with bronze vane and valves.

L. C. RONEY INC.
1740-44 W. 59th ST. · LOS ANGELES, CALIF.

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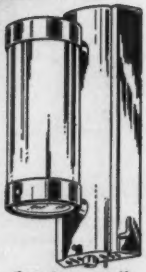
Quality Appliances for
BUTANE · PROPANE

NO. 1 OPALITE

Lighting with gas becomes modern and popular with these new Humphrey Opalites. There's all the comforting brilliance of daylight without glare.



JUNIOR OPALITE

Especially designed for lighting smaller areas. Send for complete information on all Humphrey Butane and Propane Gas appliances.

GENERAL GAS LIGHT CO.
KALAMAZOO, MICHIGAN

The new delivery tank truck, with improved unloading facilities, of Northwest Hydro-Gas firm.

New Hydro-Gas Firm Locates In Minneapolis, Minn.

The Northwest Hydro-Gas Co. has been established with headquarters at Minneapolis, Minn. Officers of this company are Chas. D. Dubar, president; John Turney, vice-president; and George A. Dubar, secretary and treasurer. The company will sell liquefied petroleum gas systems, appliances and fuel direct to the customer in the areas immediately adjacent to Minneapolis, and plans to sell gas systems through dealers located in the states of Minnesota and Wisconsin. Special facilities which assist in unloading the liquid fuel from truck tank containers have been provided as a part of the delivery equipment. (See photo above.)

An initial installation has just recently been completed.

◆ ◆

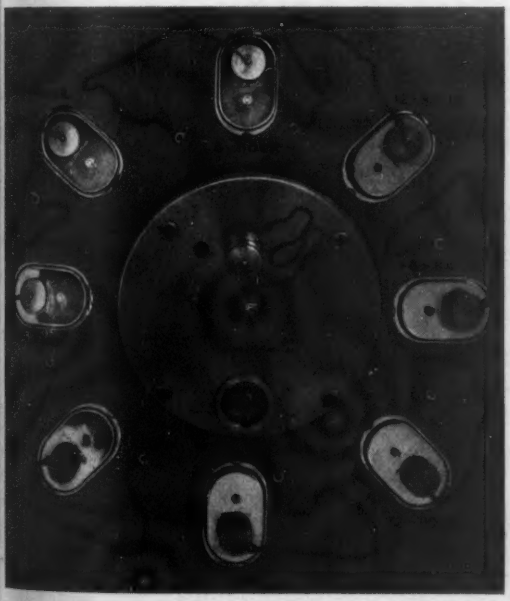
Storage Plant Established At Angels Camp, Calif.

A 6000-gal. butane bulk storage plant has been established in Angels Camp, Calif., by C. A. Simondet and James Morgan, with an initial investment of $7000. Distribution will be throughout the districts along the Mother Lode mining section in the vicinity of Angel's Camp.

The plant is located in the portion of town known as Altaville on the corner of Highway No. 40 and Dogtown Road. Six men will be employed when the organization is fully under way.

Part of the fast-growing fleet of the Midwest Gas Service Company, Springfield, Mo. These units were designed and built by McNamar. Capacity 1,000 gallons butane.

McNamar Boiler & Tank Mfg. Co., Tulsa, Okla., and Salem, Ill., manufacture a complete line of equipment for either butane or propane including transports, skid tanks, stationary and underground systems. Inquiries will receive prompt attention.



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Fits practically all instruments using circular charts. Runs eight days on one winding. Converter gears to give different chart rotation speeds changed in few minutes without special tools or skill. Cuts clock inventories; requires minimum maintenance. Hermetically sealed against moisture, dust, corrosive gases. Send for Bulletin 104-A.

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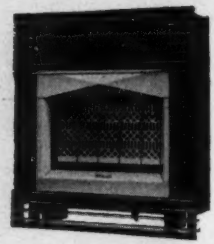
CIRKLAIR
GAS
HEATER
INSET
UNIT



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CIRKLAIR GAS HEATER Inset Units (CI - 1210 being shown in illustration) are A. G. A. Approved. These are the inset units used in CIRKLAIR Fireplace Insets, Consoles, Mantels, Wall Heaters and for special installations. Cirklair Bathroom Heaters also are A. G. A. Approved.

Write for the interesting CIRKLAIR STORY.

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The Folsom Co. "Since 1909"
509-15 Elm Dallas, Texas

Sell DAY AND NIGHT
"America's Finest Water Heater"
1. 100% Safety Devices. 2. Economical Operation. 3. Foolproof Non-adjustable Burners — all insure complete customer satisfaction.
DAY & NIGHT WATER HEATER CO.
MONROVIA, CALIFORNIA

Style No. 60

Won't Leak, Stick or Bind

CHIKSAN Ball-Bearing Swing Joints are Butane and Propane tight. Made in 17 different styles for pressures to 3,000 lbs.

Write for Catalog
CHIKSAN TOOL COMPANY
BREA, CALIFORNIA

New Mexico Health Board Adopts LPG Regulations

The State Board of Health of New Mexico adopted regulations governing the use of liquefied petroleum gases in December, according to Paul S. Fox, public health engineer. The regulations are those recommended by the National Board of Fire Underwriters, with the only addition being a registration set-up for equipment dealers.

The last legislature authorized the State Board of Health to adopt these resolutions but made no provisions for funds to defray publication and enforcement costs. The matter has been referred to the State Finance Board with the hope that the needed money can thus be obtained. The regulations do not become effective until after publication.

◆ ◆

Arizona Highway Dept. Seeks Butane Census

Among other information that the Arizona Highway Department has sought to obtain during the automobile re-licensing period is the number of motors using butane or other forms of liquefied petroleum gas.

The application form for license plates carriers this question and several others as well, answers to which will be used to help determine past and future fuel consumptions and revenues and provide a basis for estimating highway development for the future, to the end that the State may continue to enjoy the fullest possible benefits from the present Federal-aid highways program.

◆ ◆

Garretson, S. D., Will Install New Municipal Butane Plant

The city council of Garretson, S. D., signed a contract on Jan. 22 for the purchase of a new butane plant to serve the municipality and to replace the old manufactured gas that is now being used.

Tank cars will deliver the fuel to city tanks, from where it will be distributed through the present mains.

A Complete MANUFACTURING and FIELD SERVICE

CIAC API-ASME ASME All Codes

Whatever your requirements may be in high pressure tanks, American can fulfill them as you wish; placing at your disposal years of valuable experience, relieving you of much detail and effort, and rendering unsurpassed service from plan to finished installation. Tell us your needs. We will supply valuable data and preliminary service without obligation.

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Sheet and Plate Fabrication
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AMERICAN BUTANE and PRESSURE TANKS

STORAGE - SKID and MOBILE TANKS - HOUSEHOLD BOTTLES

QUALITY! BUTANE-PROPANE TANKS Designed for Rigid Repuirements

Underground and Above-Ground Service

Qualified to manufacture pressure vessels in accordance with the ASME code; API-ASME Committee; Department of Public Safety, Commonwealth of Massachusetts; and National Board of Boiler and Pressure Vessel Inspectors.

Avail yourself of Lancaster's complete engineering and estimating service—with no obligation, of course. Bulk and domestic plants designed and fabricated for

Butane • Propane
Butane-Propane Mixtures

LANCASTER IRON WORKS, INC.
LANCASTER PENNA.

AUTOMATIC GAS SHUT-OFF CONTROL Thermocouple Type

General Controls Thermovalve MR-2 For direct gas line shut-off. Pilot flame applied to thermocouple element makes electrical contact, holding valve open. No outside current is used. Upon pilot flame failure, valve automatically closes. After flame failure, valve must be manually reset. Standard thermocouple length 30". Valve sizes ⅜" to 1½".
Write for new 1940 Catalog

GENERAL CONTROLS
450 E. Ohio St., Chicago, Ill.
267 5th Avenue New York City

RUUD
Automatic Gas Water Heaters
For Butane and Propane Gases
- ALL TYPES AND SIZES
- MONEL TANK MODELS
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- COMPLETE SALES HELPS

Write for Our Butane-Propane Dealer Helps
Ruud Manufacturing Company
PITTSBURGH, PA.

VULCAN COMMERCIAL COOKING EQUIPMENT IS A BIG LOAD-BUILDER!
Sell more ranges, ovens, broilers, deep-fat fryers. Write for promotion plan and nearest sales office.
Standard Gas Equipment Corp.
18 East 41st Street, New York

THE KITCHEN RANGE

By J. F. DAWSON
Manager, Butane Gas Service Co., Soquel, Calif.

If you'll pardon my intrusion,
Which perhaps you may think strange
And permit an introduction,
I am the kitchen range.
For these many years I've served you,
Done the very best I could.
Tho' the only thing you've fed me
Is dirty coal and wood.

I've been talking with my cousin
Down in the other block
And she tells me I'm old fashioned
And need another frock.
She dresses now in shining white
And is a comely lass
Instead of dirty coal and wood
She's getting modern gas.

They tell me that insulation
Would surely help me bake
And if I am not mistaken,
You like a lovely cake.
A clock to help me time the meal,
A broiler for the meat
And simmer burners for the top
Would surely make me meat.

If you'll dress me up a little
Like cousin down the street,
'Twill cost you less to keep me
And the food will be a treat.
I will keep the house more tidy,
I'm sure you'll like the change.
If you'll only make me modern
You'll love your kitchen range.

(Reprinted from the "Roper Ranger")

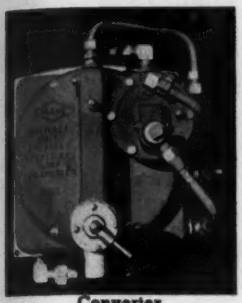
◆ ◆

The Economy Heating & Plumbing Co. is the distributing agent for Hydro Gas service in Odessa, Mo., according to an announcement by the proprietor, L. H. Davis.

•

The Associated Oil Co., of San Francisco, has been granted a permit to establish a butane filling plant in Bayshore City, a suburb of San Francisco.

"ALGAS" One Sure Thing



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Gas-Air Mixer

is that you are in business, and any way you look at it, you must have PROFITS—and you can't hire 'em, but—in using

Algas Butane Carburetors

for tractors, trucks, buses, and stationary engines, you can earn 'em.

A Sales and Service Manual goes to each dealer. It is so complete and instructive, that the average mechanic can, *quickly* and *easily*, make an installation. Dealerships Solicited.

AMERICAN LIQUID GAS CORP.

1109 Santa Fe Avenue — Los Angeles, California

The ONE Complete Line!

ATTENTION DEALERS!

We are now able to offer you a complete price range enabling you to go after competitive business! Exclusive territory available. Ask about our new dealer plan.

Write, Phone or Wire for Complete Information

Automatic Gas Equipment Co.

Manufacturers and Distributors

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National Automatic Gas SYSTEM

The Most Distinctive Underground Storage System on the Market

Manufactured by

NATIONAL BUTANE GAS COMPANY

MEMPHIS, TENNESSEE

Write for Particulars

GLO-FIRE LOG

Assures Odorless, Economical Circulating Heating Operation with

Butane and Propane

For Information Write

GLO-FIRE CO.

ELSINORE CALIFORNIA

MERIT

NEWS!

All-Purpose Line Covers All Types of Hot Water Prospects

Complete Laboratory for Dealers

WRITE for Catalog Sheets and Sales Handbook

Merit Water Heater Co.

COMPTON, CALIFORNIA

Bastian-Morley Co. Announces Organizational Changes

Robert I. Smith has returned to the sales staff of Bastian-Morley Co., Inc., La Porte, Ind., according to an announcement made on Feb. 1, by James F. Donnelly, sales manager of the corporation.

Prior to joining the Bastian-Morley organization in 1935, Mr. Smith had been associated with the Central Gas & Electric Corp., Poughkeepsie, N. Y., and the Central New York Power Corp., Syracuse, N. Y.

From 1935 to 1937, Mr. Smith represented the company in the Philadelphia area. He was then brought into the La Porte plant and assisted in the reorganization of the factory testing division.

Mr. Smith is living in Boston, Mass. He will work with the company's national distributor, Crane Co., contacting Crane branches in the New England states and in Albany and Syracuse, N. Y.

Mr. Donnelly has also announced that effective Feb. 5, Granville G. Reynard will be located in Portland, Ore. Mr. Reynard has moved from South Bend, Ind., and will represent Bastian-Morley Co., Inc., from Portland as far East as Salt Lake City, Utah.

Winfield L. Redding, since 1935 in New York State for the company, is now in the La Porte sales division. Before joining the Bastian-Morley organization, Mr. Redding had been associated with the Brooklyn Union Gas Co., Brooklyn, N. Y.

◆ ◆

Farm Power Course Will Include Butane

A course in what is designated as farm power was started on Jan. 29 by the Modesto, Calif., junior college and will continue each second, fourth and fifth Monday night throughout the Spring semester. Butane as a fuel and butane equipment for heavy duty work on farms are subjects included in the course.

In charge will be K. R. Frost, instructor in agricultural engineering under the supervision of R. A. Sylva, head of the department of agriculture.

Gilbert Woodill Joins Parkhill-Wade Firm

Announcement of the active association of Gilbert Woodill, long identified with the liquefied petroleum gas industry, with the firm of Parkhill-Wade, Los Angeles, consulting and construction engineers, has been announced by C. L. Parkhill, vice president of the company.

GILBERT WOODILL

Parkhill - Wade are LPG engineers, designers, contractors and manufacturers of liquefied petroleum gas production plants, storage systems, bus, truck and tractor conversions and dispensing equipment. The association of Mr. Woodill with the firm is a move to correlate the firm's engineering and sales activities and thus widen its scope of service.

Mr. Woodill was formerly sales manager for the Ensign Carburetor Company, and has been in intimate contact with the utilization of butane-propane mixtures in internal combustion engines since the inception of such utilization and the application of liquefied petroleum gases as fuel for trucks, buses, agricultural equipment, oil well drilling engines and general industrial purposes.

During 1939 Mr. Woodill was chairman of the Pacific Coast Section of the Liquefied Petroleum Gas Association, while for two years he served as a member of that association's committee on regulations. He was also a member of L.P.G.A.'s board of directors. As a member of the general committee working with the Industrial Accident Commission of the State of California, Mr. Woodill assisted in promulgation of that body's LPG Safety Orders issued as of March 12, 1934. In addition to these activities he is the author of numerous articles on the subject of LPG, its utilization and regulations. Some have circulated nationally.

For Safety

and Economy

ETHYL MERCAPTAN

Purified

The ACCEPTED standard odorant for liquefied petroleum gases.

MALLINCKRODT CHEMICAL WORKS

ST. LOUIS NEW YORK

SPRAGUE METERS

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PROPANE-BUTANE SERVICE

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Write for Particulars

SPRAGUE METER COMPANY

Bridgeport, Conn.

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REGISTERED TRADE MARK

AUTOMATIC "Liquid Gas"
WATER HEATERS

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COMPLETE RHEEM LINE
15 to 95 Gallon Capacities

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100% SAFE
Equipped with Grayson Unitrol

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EFFICIENCY
Designed and tested for long life and economy

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for all purposes
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STOP BUTANE LEAKS with
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You can stop leakage of Butane gas once and for all, by applying RECTORSEAL to every threaded or gasket connection on consumer tanks, bulk storage and truck tanks. RECTORSEAL forms a plastic, elastic mass impervious to Butane, and all other fractions of petroleum, and to heat up to 400° F. It makes a permanent leak-proof seal, yet permits easy breakout. Sold in container sizes to fit your needs.

RECTOR WELL EQUIPMENT CO., INC.
Ft. Worth National Bank Bldg., Ft. Worth, Tex.

Completing Central Plant For Alamogordo, N. M.

Under the terms of a revised franchise, the Sacramento Corp., headed by Uel M. Lane, has installed a liquefied petroleum gas central plant in Alamogordo, N. M., and it was expected that gas would be turned on by Feb. 1. The franchise runs for 25 years, with the provision that the city may, at its option, purchase the plant at that time or even at the end of the first 10 years.

In city districts where mains have not yet been laid, customers will be served bottled gas.

The system consists of 33,000 ft. of 2- and 3-in. mains, with 200 meters and a 4000-gal. vaporizing plant. Gas will be furnished by the El Paso Natural Gas Co., of El Paso, Texas, from its plant at Jal, N. M., and trucked to Alamogordo.

◆ ◆

Servel, Inc., Issues New Dealer Publication

The *Servel Rural Dealer Review*, a news review of Servel Electrolux dealer activities beyond the gas mains, and published by Servel, Inc., at Evansville, Ind., has made its first appearance. It is under the editorial direction of J. E. Duffield, Jr.

This attractive magazine, liberally illustrated and filled with helpful sales ideas, is being distributed to all dealers handling Servel Electrolux refrigerators for use with liquefied petroleum gas. It will be a clearing house of information for the industry and is intended to stimulate greater rural sales activities.

◆ ◆

Modesto, Calif., Passes Butane Gas Ordinance

After many months of delay, the city of Modesto, Calif., has finally passed an ordinance governing the sale and use of butane and other liquefied petroleum gases within the city limits. Storage, installation of domestic and commercial plants, and filling stations serving automotive equipment are covered.

New 1000-gal. streamlined tank truck of the West Florida Gas Co., whose headquarters are at Panama City.

West Florida Gas Co. Gets New Equipment

The West Florida Gas Co., of Panama City, Fla., has recently purchased a new, streamlined, 1000-gal. tank truck to add to its delivery fleet that serves nine Florida counties with Green's Fuel. (Photo above.)

This truck is a standard model that will be widely used by distributors of Green's Fuel throughout Florida.

The West Florida Gas Co. is directed by P. R. Palethorpe, B. W. Eells and A. M. Lewis.

◆ ◆

C. N. Payne Is American Meter Manager at Kansas City

American Meter Co. announces the appointment of Calvin N. Payne as manager of its Kansas City office, succeeding the late Eugene Metz.

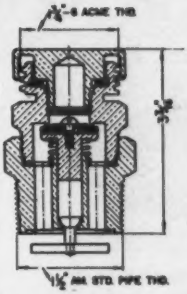
Mr. Payne's recent promotion comes after association with his company for the past 18 years. After 10 years of production, service and sales experience at the Metric Metal Works plant, Erie, Pa., he was placed in charge of the Denver, Colo., office in 1930.

He will now assume the responsibility for serving his company's customers located in Missouri, Kansas, Nebraska, as well as in Colorado, and in adjacent areas of Utah, Wyoming and Montana. He is a member of the American Gas Association, the Midwest Gas Association and the Missouri Utilities Association.

◆ ◆

The Thormack Gas Co., Okmulgee, Okla., has filed an amendment to its State charter, asking for an increase of capitalization from $10,000 to $20,000.

TENNANT



Precision-Built

FILLER VALVE

for Butane Systems

(Type 1810)

Like all TENNANT APPROVED FITTINGS this Type 1810 Filler Valve can be depended upon to do its job well. Precision built. Rugged construction of heavy brass. Excess flow check is a structural part.

Write for catalog and price list of approved fittings for butane systems.

BUTANE GAS SYSTEM CO.
(Tennant Bros.)
1829 CLARENCE DALLAS, TEXAS

The

CARTER OIL COMPANY

Tulsa, Oklahoma

Manufacturers and Suppliers

of dehydrated

PROPANE and BUTANE

for the distributing and industrial trade. Shipping point: Seminole, Oklahoma.

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"Pioneers of the Butane Industry"

Complete Stock of

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and

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MILWAUKEE

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Manufactured by

PRESSED STEEL TANK CO.

Butane and Natural Gas Instruments
Domestic Regulators, Pigtails, Tanks,
Gauges, Forged Brass Fittings, Etc.

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Reduce Maintenance Costs

DRYGAS FILTER

removes all harmful substances from Butane, Propane or Natural Gas by the chamois element, protecting delicate mechanism. It contains no felt or metal wool. Reasonably priced.

Dealers, Distributors Wanted

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Especially Designed
For Butane-Propane Gases
For All Purposes
with
Satisfaction Guaranteed

Write for Dealer Discounts

F & E MANUFACTURING CO.

2918 Otis Street, Berkeley, Calif.

Motor Vehicle Engineering Society Discusses Butane

Butane gas and its application was the general subject of papers and discussions at the February 23 meeting of the Motor Vehicle Engineering Society in Los Angeles. Glen H. Hile, Standard Oil Co. of California, spoke on "What Is Butane?" H. V. Snodgrass, Century Gas Equipment Co., Long Beach, Calif., discussed "The Advantages of Butane as a Motor Fuel," and A. G. Bodine, American Liquid Gas Co., Los Angeles, had as his subject, "The Conversion of Gasoline Motors for the Use of Butane."

Butane tanks, heat exchangers, carburetors and actual truck conversions were on display for the occasion by various manufacturers. These were housed at the L. A. Automotive Works.

◆ ◆

"To the Ladies" Is Automatic Gas Equipment Co. Booklet

Automatic Gas Equipment Co. of Dallas has issued a mailing piece, addressed "To the Ladies," explaining the convenience of cooking, heating water, refrigerating and heating with the Automatic Gas System. The literature has been introduced in the interests of the dealer organization, according to C. J. Bender, president. Each dealer's name is imprinted on the pamphlets given him for distribution.

The company has recently established warehouse facilities at Roswell, New Mexico. The Automatic and Eveready systems of the company are now manufactured at Dallas and Houston, Texas, and Little Rock, Ark.

◆ ◆

Fred R. Caddel, of Paris, Texas, is preparing to install a 12,000-gal. high pressure storage plant in that city, according to an announcement by **H. C. Pittman,** president of the Automatic Gas Co., Inc., of Tyler.

•

The Nash Appliance and Supply Co., Shamrock, Texas, has been appointed agent for Hydro-Gas systems.

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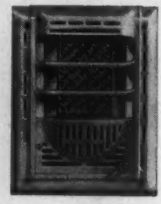
Peerless Wall Heaters

Today Buyers everywhere are demanding Peerless Gas-Fired Wall Type Bathroom Heaters.



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LOUISVILLE **KENTUCKY**

CLOW GASTEAM RADIATORS

Make Their Own Steam Heat With Any Gas

Send for Copy of Our Architects Manual

JAMES B. CLOW & SONS

201-299 North Talman Avenue, Chicago, Ill.

BUTANE TANKS REFINERY EQUIPMENT

★

Southwestern Engineering Co.

4800 Santa Fe Ave., Los Angeles, Calif.

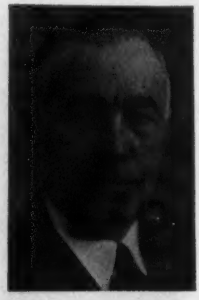
Butane Gas Co. Establishes Branch at Fayetteville, Ark.

A branch office of the Butane Gas Co., Inc., of Little Rock, Ark., has been announced by W. O. Childress, manager. It will be established at Fayetteville and will serve nine surrounding counties in the northwestern part of the State. A dozen men will be employed to cover that territory, with a central bulk plant erected at Fayetteville.

According to Mr. Childress, the Butane Gas Co., Inc., has been established in Arkansas for six years and has thousands of rural homes using liquefied petroleum gas. Several other bulk stations and branch offices are located throughout Arkansas. Customers are served by a fleet of specially designed tank trucks.

◆ ◆

John D. Kerrins, who has been associated with the Sprague Meter Co. at Bridgeport, Conn., for the past 22 years as supervisor of production and cost, was appointed assistant general manager of the company on Jan. 22, according to an announcement by E. L. Ballou, supervisor of sales.



J. D. KERRINS

Mr. Kerrins is considered an authority on meter leather tannage. He has been in charge of material experimentation and tests for a number of years. The Sprague Meter Co. manufactures gas meters for natural and liquefied petroleum gases.

◆ ◆

J. C. Sanderson, formerly in the appliance business at Hattiesburg, Miss., has assumed managership of the Dockson Gas Co. at Alexandria, La. The Dockson Gas Co. operates through a Hydro-Gas franchise, one covering parishes of central Louisiana, and another covering the main portion of the State of Mississippi.

At Last!

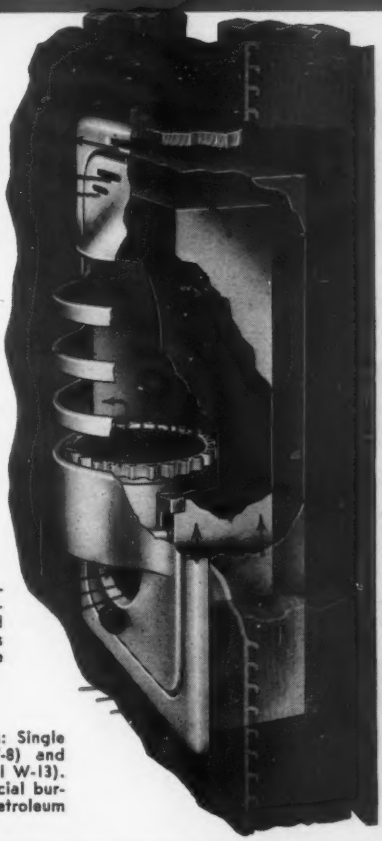
A WALL HEATER WITH MODERN STYLE

....and Colors too!

LECTRO-GLO
WALL HEATERS

ooth, streamlined design! Baked porcelain mel fronts in modern colors to harmonize h modern color schemes.

tro-Glo Wall Heaters are more efficient . . . e economical . . . entirely new in burner tment. No open flame . . . no fumes . . . no t. No fragile elements to break or discolor.



The Lectro-Glo grid-and-burner design is utterly different in appearance and performance. It produces more effective heat while it consumes less gas.

Made in two sizes: Single Burner (Model W-8) and Twin Burner (Model W-13). Equipped with special burner for Liquefied Petroleum Gas.

RADIANT - CIRCULATING AND REFLECTED HEAT

Radiant Heat is distributed by a special grid, located above the burner. A satin-smooth reflector adds to efficiency by reflecting heat into the room. Circulating Heat is obtained from air circulating through the heater and passing through openings in the front.

Manufactured under Landis Radiant Mantle Patents Pending.

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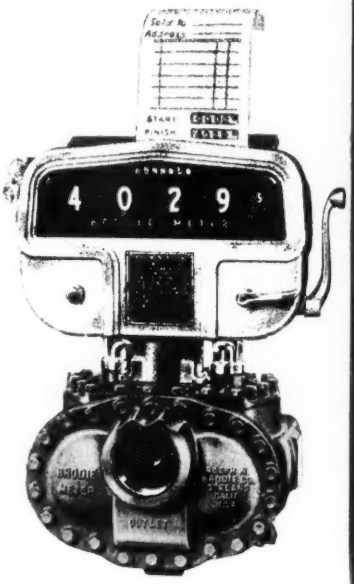

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